SITE INFORMATION

Report Type: Closure Report

General Site Information:		
Site:	SENM SWD System (Northwest Central)	
Company:	COG Operating LLC	
Section, Township and Range	Unit N - Sec. 17 - T-17S - R-30E	
Lease Number:	NMNM-86025	
County:	Eddy Conty	
GPS:	32.83047° N	103.99600° W
Surface Owner:	Federal	
Mineral Owner:		
Directions:	From Loco Hills at the intersection of Hwy 82 and CR-217 (Hagerman Cuttoff), travel north on CR-217 0.6 mi, turn left 0.4 mi, turn right 300' to location.	
	30-015-04186	30-015-20972

Release Data:	Spill #1	Spill #2	Spill #3
Date Released:	5/12/2010	12/15/2010	6/25/2012
Type Release:	Produced water	Oil	Oil and Water
Source of Contamination:	6" Poly line weld failed	Oil Tank	Produced water tank
Fluid Released:	300 bbls	23 bbls	700 bbls
Fluids Recovered:	200 bbls	20 bbls	650bbls
Official Communication:	2RP-536	2RP-573	2RP-1212

Name:	Robert McNeill		Ike Tavarez
Company:	COG Operating, LLC		Tetra Tech
Address:	One Concho Center		4000 N. Big Spring
P.O. Box	600 W. Illinois Ave.		Suite 401
City:	Midland Texas, 79701		Midland, Texas
Phone number:	(432) 686-3023		(432) 682-4559
Fax:	(432) 684-7137		
Email:	rmcneill@conchoresources.com		ike.tavarez@tetratech.com

Ranking Criteria

Depth to Groundwater:	*Ranking Score*	*Site Data*
<50 ft	20	
50-99 ft	10	
>100 ft.	0	

WellHead Protection:	*Ranking Score*	*Site Data*
Water Source <1,000 ft., Private <200 ft.	20	
Water Source >1,000 ft., Private >200 ft.	0	0

Surface Body of Water:	*Ranking Score*	*Site Data*
<200 ft.	20	
200 ft - 1,000 ft.	10	
>1,000 ft.	0	0
Total Ranking Score:	0	

Acceptable Soil RRAL (mg/kg)		
Benzene	*Total BTEX*	*TPH*
10	50	5,000

NM OIL CONSERVATION
ARTESIA DISTRICT
JUN 04 2014

RECEIVED

TETRA TECH

May 19, 2014

Mr. Mike Bratcher
Environmental Engineer Specialist
Oil Conservation Division, District 2
811S. First Street
Artesia, New Mexico 88210

Re: Closure Report for the COG Operating LLC., Northwest Central (SENM SWD System), Unit N, Section 17, Township 17 South, Range 30 East, Eddy County, New Mexico

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess three spills from the Northwest Central (SENM SWD System) Tank Battery located in Unit N, Section 17, Township 17 South, Range 30 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.83047°, W 103.99600°. The site location is shown on Figures 1 and 2.

Background

Spill #1

According to the State of New Mexico C-141 Initial Report, a leak was discovered on May 12, 2010, when approximately three hundred (300) barrels of produced water released from a poly line weld on a 6" transmission line. To alleviate the problem, COG personnel repaired the poly line. Two hundred (200) barrels of standing fluids were recovered. The spill initiated on the north of the facility, flowed south approximately 325' and migrated approximately 150' off the facility pad. The initial C-141 form is enclosed in Appendix A.

Spill #2

On December 15, 2010, an oil tank overflowed caused by a plugged equalizer line, releasing approximately 23 barrels of oil. COG recovered 20 barrels using a vacuum truck. The spill flowed south of the facility pad measuring approximately 3' x 100' and migrated on top of the spill #1 footprint.

Tetra Tech
4000 North Big Spring Suite 401, Midland, TX 79705
Tel 432.682.4559 Fax 432.682.3946 www.tetratech.com

Spill #3

On July 25, 2012, a 10,000 bbl open top water tank overflowed caused an electrical error and alarm that caused water to be diverted to the open top tank instead of the tank battery, releasing approximately 700 barrels of oil and 100 barrels of produced water. COG recovered 650 barrels of oil and 50 barrels of produced water using a vacuum truck. The spill flowed around the open top tank and migrated on top of the spill #1 footprint.

Groundwater

No water wells were listed within Section 17. According to the NMOCD groundwater map, the average depth to groundwater in this area appears to be 250' to 275' below surface. The groundwater data is shown in Appendix B.

Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 5,000 mg/kg.

Soil Assessment and Analytical Results

Spill #1

On June 23, 2010, Tetra Tech personnel inspected and sampled the spill area. A total of seven (7) auger holes (AH-1 through AH-7) were installed using a stainless steel hand auger to assess the impacted soils. Auger holes were not installed east of the tanks, due to the dense surface caliche in the area. In addition, the area of AH-4 appears to be near a closed reserve pit area. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The results of the sampling are summarized in Table 1. The spill area and auger hole locations are shown on Figure 3.

Referring to Table 1, all of the submitted samples were below the RRAL for TPH and BTEX. Elevated chloride concentrations were detected in the majority of the auger holes. Auger holes (AH-2 and AH-4) were vertically defined at 7'-8' and 2'-3', respectively. The remaining auger holes required additional delineation.

On August 17, 2010, Tetra Tech supervised the installation of eight (8) soil borings (SB-1 through SB-8). In the area north of the facility, additional soil borings were not installed due to the buried electrical lines and active underground lines in the area. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 2. The soil boring locations are shown on Figure 3.

Referring to Table 1, all of the soil borings were vertically defined and show a shallow chloride impact to the subsurface soils ranging from 1.0' to 7.0' below surface. Soil boring (SB-3 and SB-6) showed a shallow impact to the soil at 1.0' and 2.0' below surface. SB-2, SB-4, SB-5, SB-7 and SB-8 were vertically defined at approximately 3.0' to 5.0' below surface. The area of SB-1 did show the deepest impact of 5.0' to 7.0' below surface.

Spill #2

On December 15, 2010, a second spill occurred at the site when the tank overflowed east of the tank battery and flowed south encompassing part of the spill #1 footprint. On February 25, 2011, Tetra Tech supervised the installation of seven (7) soil borings (SB-1 through SB-7). Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 2. The spill area and auger hole locations are shown on Figure 3.

Referring to Table 2, all of the submitted samples were below the RRAL for TPH and BTEX. The soil boring results showed a shallow chloride impact to the subsurface soils and were all defined at depths ranging from 3.0' to 7.0' below surface.

Spill #3

On July 31, 2012, Tetra Tech personnel inspected and sampled the spill area. A total of four (4) auger holes (AH-1 through AH-4) were installed using a stainless steel hand auger to assess the impacted soils. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The results of the sampling are summarized in Table 1. The spill area and auger hole locations are shown on Figure 3.

Referring to Table 3, all of the submitted samples were below the RRAL for TPH and BTEX. Elevated chloride concentrations were detected in the majority of the auger holes. Auger hole (AH-4) was vertically defined at 2'-2.5' with a chloride level of 443 mg/kg. The remaining auger holes required additional delineation.

On September 31, 2012, Tetra Tech supervised the installation of two (2) soil borings (SB-1 and SB-2). Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 3. The soil boring locations are shown on Figure 3.

Referring to Table 3, all of the soil borings were vertically defined at 6.0' below surface and showed a shallow chloride impact to the subsurface soils ranging from 0' to 5.0' below surface. Soil borings (BH-1 and BH-2) showed a shallow impact to the soil with a maximum chloride level of 8,770 mg/kg (0-1.0') and 3,800 mg/kg (2.0'-3.0') and decreased to 413 mg/kg (6.0-7.0') and 118 mg/kg (6.0-7.0'), respectively.

Remedial Activities

On February 17, 2014, Tetra Tech supervised the removal of impacted material as highlighted (green) in Table 1, 2 and 3 and shown on Figure 4. In order to remove the elevated chloride concentrations, the excavations ranged from 1.0' to 3.5' below surface.

Two areas (east and south) of water tank were capped with a clay material as shown on Figure 4. Due to numerous lines and equipment west of the water tank, the area was not excavated due to safety concerns. In this case, the impacted soil will be deferred until the abandonment of the facility. In addition, some of the proposed depths were not achieved due to limited access, lines and structures in the area. Once excavated, Tetra Tech collected confirmation samples from the excavation bottom holes and sidewalls. The sampling results are shown on Table 4.

Approximately 2,260 cubic yards of excavated soil was transported to proper disposal. Once excavated to the appropriate depths, the excavation was backfilled with clean soil.

Conclusion

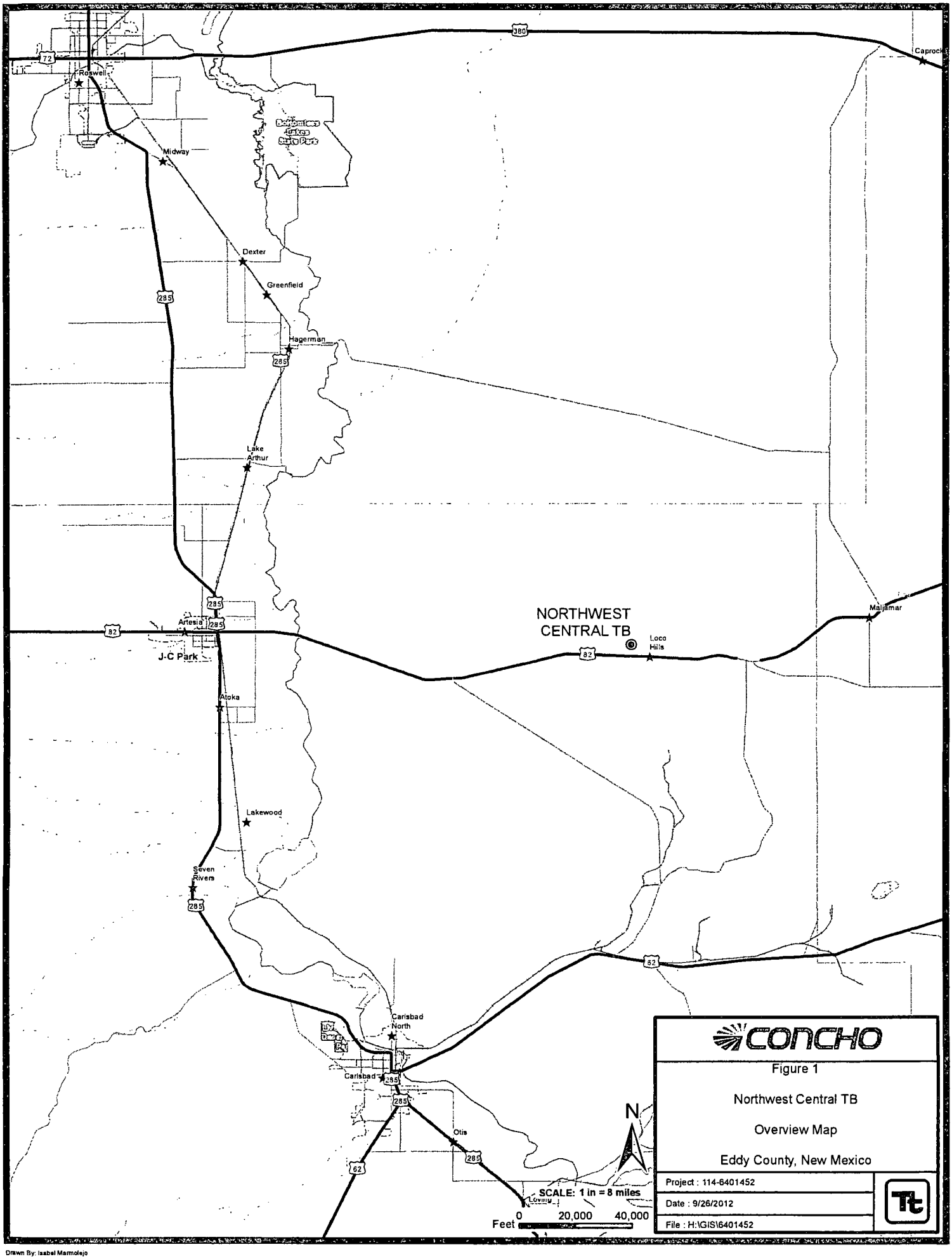
Based on the assessment and remedial activities at this site, COG requests closure of the spill. A Final C-14's are enclosed in Appendix A. If you have any questions or comments concerning the assessment or the remedial actions performed, please call me at (432) 682-4559.

Respectfully submitted,
TETRA TECH

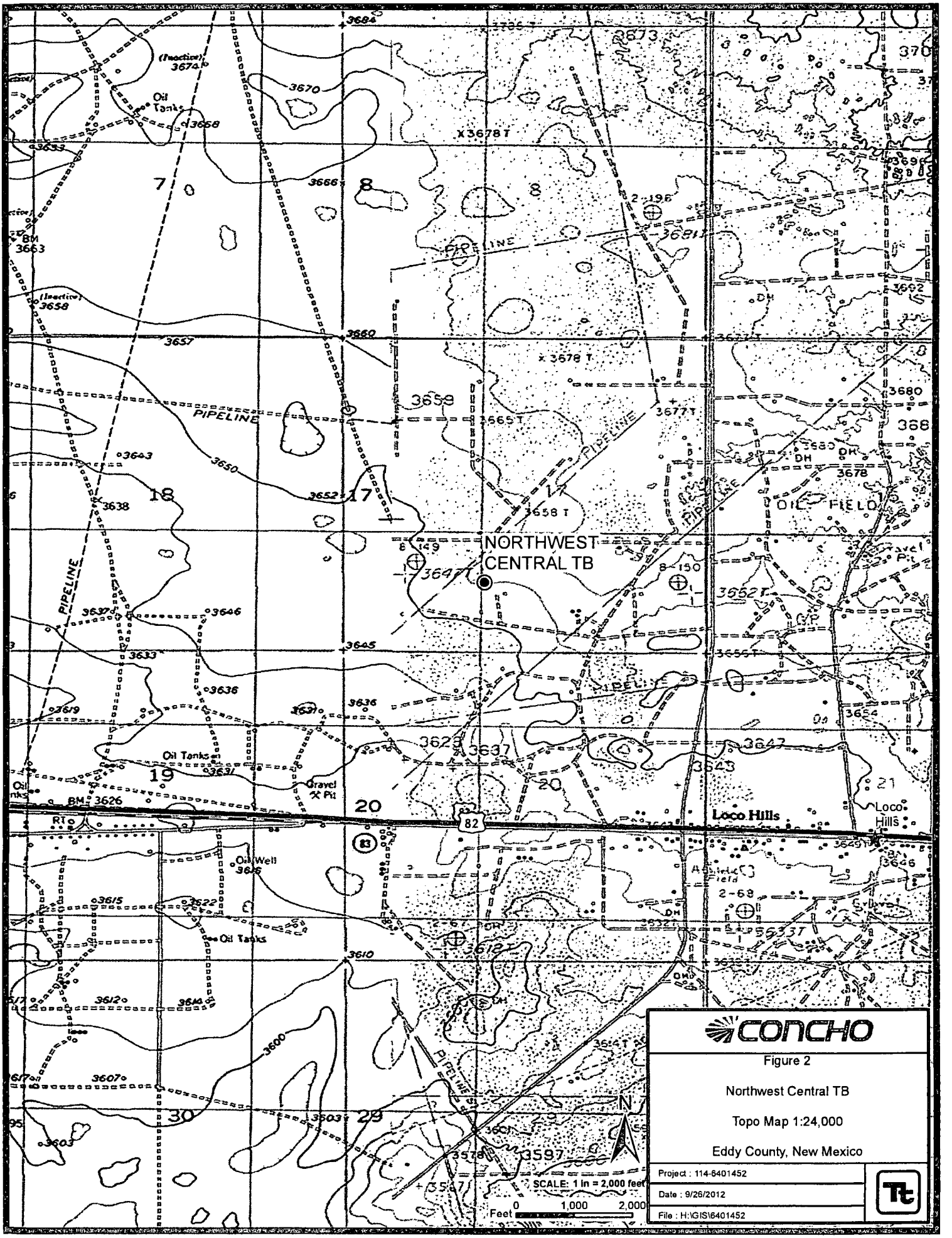
Ike Tavarez, PG
Project Manager

cc: Robert McNeill – COG
cc: Mike Burton – BLM
Jeff Robertson - BLM

Figures



Drawn By: Isabel Marmolejo



CONCHO

Figure 2

Northwest Central TB

Topo Map 1:24,000

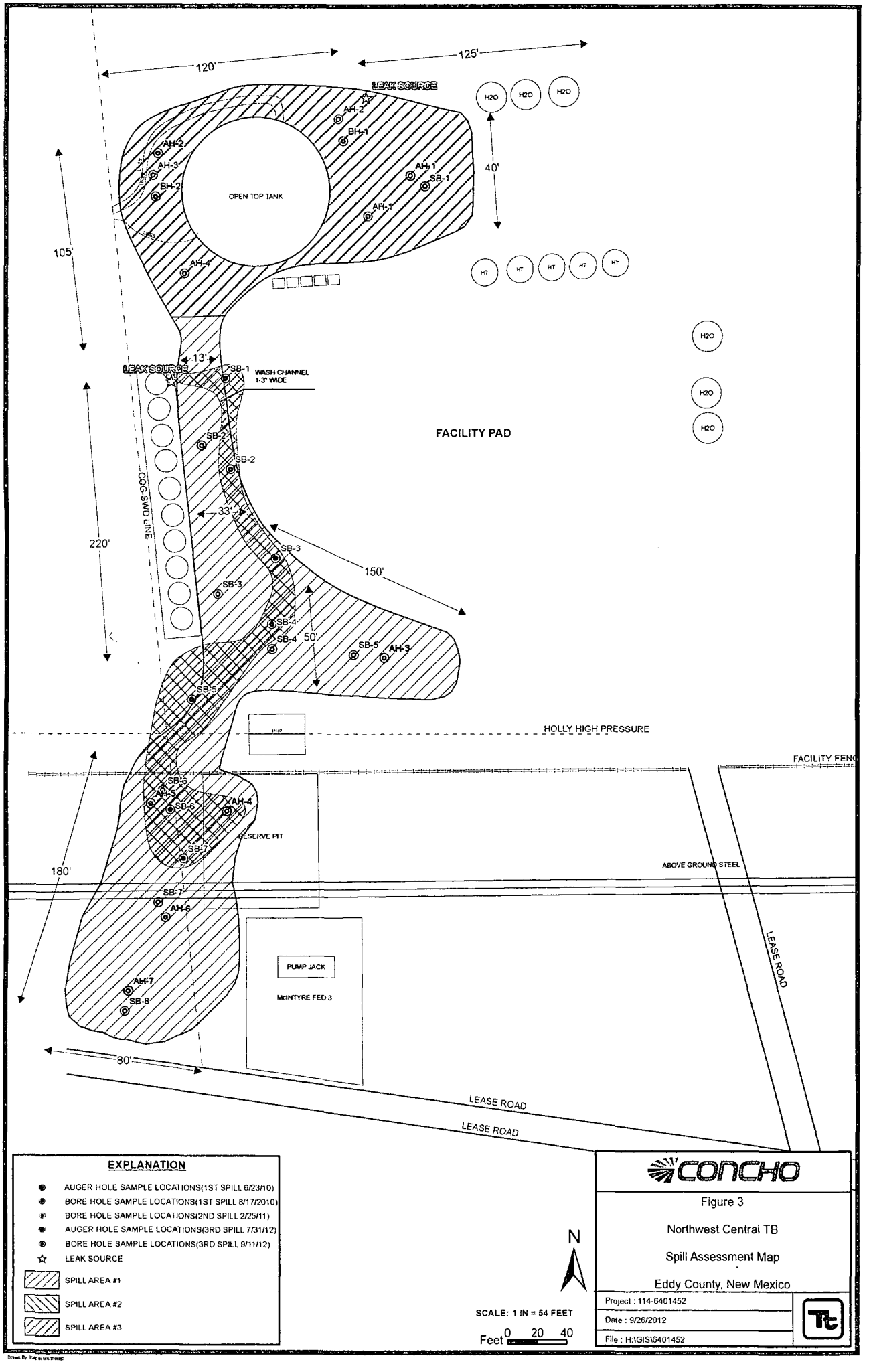
Eddy County, New Mexico

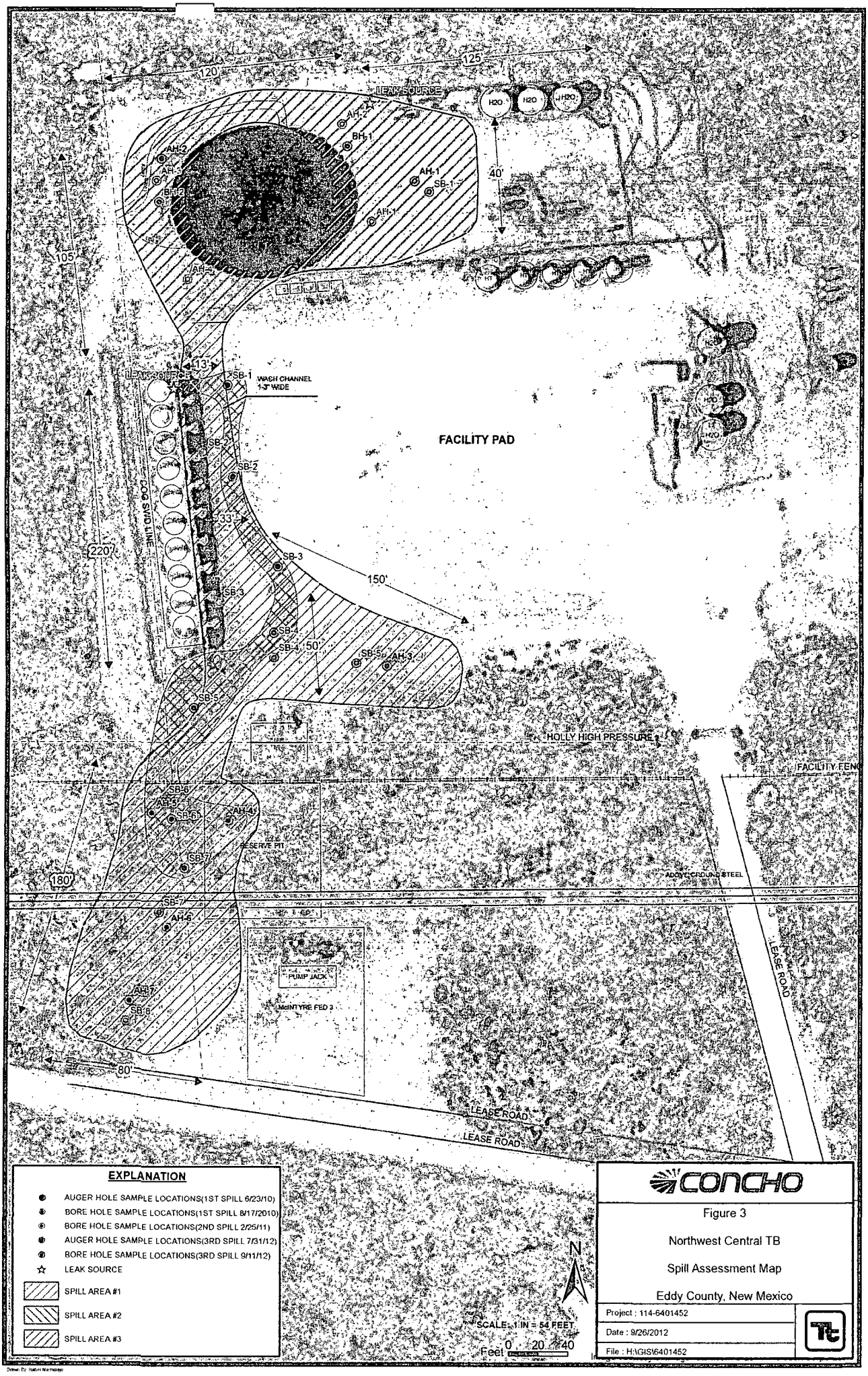
Project : 114-6401452

Date : 9/26/2012

File : H:\GIS\6401452

Drawn By: Isabel Marmolejo


120'
125'
LEAK SOURCE
AH-2
BH-1
AH-2
AH-3
BH-2
OPEN TOP TANK
AH-1
SB-1
AH-1
40'
105'
AH-4
H2O
H2O
H2O
HT
HT
HT
HT
HT
H2O
H2O
H2O
13'
LEAK SOURCE
SB-1
WASH CHANNEL
1-3' WIDE
FACILITY PAD
SB-2
SB-2
COG SWD LINE
33'
220'
SB-3
150'
SB-3
SB-4
SB-4
50'
SB-5
AH-3
SB-5
HOLLY HIGH PRESSURE
FACILITY FENC
SB-6
AH-5
SB-6
AH-4
RESERVE PIT
SB-7
180'
ABOVE GROUND STEEL
SB-7
AH-6
PUMP JACK
McINTYRE FED 3
AH-7
SB-8
LEASE ROAD
80'
LEASE ROAD
LEASE ROAD
EXPLANATION
AUGER HOLE SAMPLE LOCATIONS(1ST SPILL 6/23/10)
BORE HOLE SAMPLE LOCATIONS(1ST SPILL 8/17/2010)
BORE HOLE SAMPLE LOCATIONS(2ND SPILL 2/25/11)
AUGER HOLE SAMPLE LOCATIONS(3RD SPILL 7/31/12)
BORE HOLE SAMPLE LOCATIONS(3RD SPILL 9/11/12)
LEAK SOURCE
SPILL AREA #1
SPILL AREA #2
SPILL AREA #3
N
SCALE: 1 IN = 54 FEET
Feet 0 20 40
CONCHO
Figure 3
Northwest Central TB
Spill Assessment Map
Eddy County, New Mexico
Project : 114-6401452
Date : 9/26/2012
File : H:\GIS\6401452



CONCHO

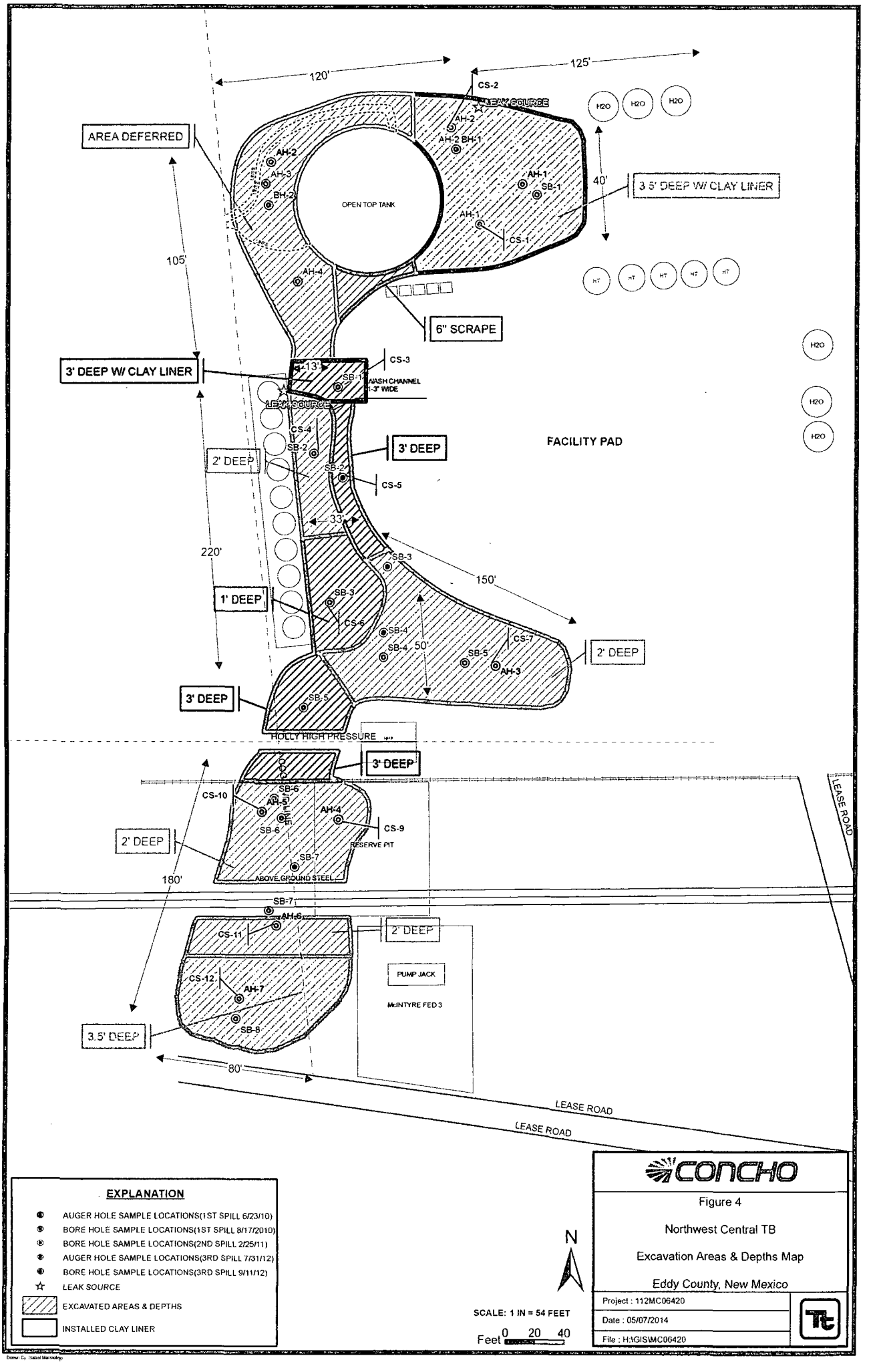
Figure 3

Northwest Central TB

Spill Assessment Map

Eddy County, New Mexico

Project : 114-6401452	
Date : 9/26/2012	
File : H:\GIS\6401452	


120'
125'
CS-2
LEAK SOURCE
AH-2
AH-2 BH-1
H2O
AREA DEFERRED
AH-2
AH-3
BH-2
OPEN TOP TANK
AH-1
SB-1
40'
3.5' DEEP W/ CLAY LINER
AH-1
CS-1
105'
AH-4
HT
6" SCRAPE
H2O
3' DEEP W/ CLAY LINER
13'
CS-3
SB-1
WASH CHANNEL
3' WIDE
LEAK SOURCE
CS-4
SB-2
3' DEEP
FACILITY PAD
2' DEEP
SB-2
CS-5
33'
220'
SB-3
150'
1' DEEP
SB-3
CS-6
SB-4
CS-7
SB-4
50'
SB-5
AH-3
2' DEEP
3' DEEP
SB-5
HOLLY HIGH PRESSURE
3' DEEP
SB-6
CS-10
AH-5
AH-4
SB-6
CS-9
2' DEEP
RESERVE PIT
SB-7
180'
ABOVE GROUND STEEL
LEASE ROAD
SB-7
AH-6
CS-11
2' DEEP
PUMP JACK
CS-12
AH-7
McINTYRE FED 3
SB-8
3.5' DEEP
80'
LEASE ROAD
LEASE ROAD
EXPLANATION
AUGER HOLE SAMPLE LOCATIONS(1ST SPILL 6/23/10)
BORE HOLE SAMPLE LOCATIONS(1ST SPILL 8/17/2010)
BORE HOLE SAMPLE LOCATIONS(2ND SPILL 2/25/11)
AUGER HOLE SAMPLE LOCATIONS(3RD SPILL 7/31/12)
BORE HOLE SAMPLE LOCATIONS(3RD SPILL 9/11/12)
LEAK SOURCE
EXCAVATED AREAS & DEPTHS
INSTALLED CLAY LINER
N
SCALE: 1 IN = 54 FEET
Feet 0 20 40
CONCHO
Figure 4
Northwest Central TB
Excavation Areas & Depths Map
Eddy County, New Mexico
Project : 112MC06420
Date : 05/07/2014
File : H:\GIS\MC06420

Tables

Table 1
COG Operating LLC.
SENM SWD System
Spill #1
Eddy COUNTY, NEW MEXICO

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	BTEX Total	Chloride (mg/kg)
				In-Situ	Removed	DRO	GRO	Total						
AH-1	6/23/10	0-1'			X	<50.0	<2.00	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.02	15800
		1-1.5'			X	-	-	-	-	-	-	-	-	6220
3.5'		2-2.5'			X	-	-	-	-	-	-	-	-	7440
SB-1	8/17/10	1'			X	<50.0	<2.00	<50.0	-	-	-	-		1,870
3.5' cap	"	3'			X	-	-	-	-	-	-	-		2,780
	"	5'		X		-	-	-	-	-	-	-		4,380
	"	7'		X		-	-	-	-	-	-	-		504
	"	10'		X		-	-	-	-	-	-	-		248
	"	15'		X		-	-	-	-	-	-	-		<200
	"	20'		X		-	-	-	-	-	-	-		<200
AH-2	6/23/10	0-1'		X		<50.0	<2.00	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.02	4400
Deferred		1-1.5'		X		-	-	-	-	-	-	-	-	6410
		2-2.5'		X		-	-	-	-	-	-	-	-	7030
		3-3.5'		X		-	-	-	-	-	-	-	-	5660
		4-4.5'		X		-	-	-	-	-	-	-	-	3140
		5-5.5'		X		-	-	-	-	-	-	-	-	2270
		6-6.5'		X		-	-	-	-	-	-	-	-	1230
		7-7.5'		X		-	-	-	-	-	-	-	-	314
		8-8.5'		X		-	-	-	-	-	-	-	-	<200
SB-2	8/17/10	1'			X	<50.0	<2.00	<50.0	-	-	-	-		19,400
2'	"	3'		X		-	-	-	-	-	-	-		22,800
	"	5'		X		-	-	-	-	-	-	-		1,350
	"	7'		X		-	-	-	-	-	-	-		300
	"	10'		X		-	-	-	-	-	-	-		230
	"	15'		X		-	-	-	-	-	-	-		<200
	"	20'		X		-	-	-	-	-	-	-		<200
SB-3	8/17/10	1'			X	<50.0	<2.00	<50.0	<0.0200	<0.0200	<0.0200	<0.0200		2,440
1'	"	3'		X		-	-	-	-	-	-	-		703
	"	5'		X		-	-	-	-	-	-	-		234
	"	7'		X		-	-	-	-	-	-	-		295
	"	10'		X		-	-	-	-	-	-	-		337
	"	15'		X		-	-	-	-	-	-	-		244

Table 1
COG Operating LLC.
SENM SWD System
Spill #1
Eddy COUNTY, NEW MEXICO

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	BTEX Total	Chloride (mg/kg)
				In-Situ	Removed	DRO	GRO	Total						
SB-4	8/17/10	1'			X	593	83.0	676.0	<0.100	0.481	0.245	1.21		6,330
2'	"	3'		X		-	-	-	-	-	-	-		8,770
	"	5'		X		-	-	-	-	-	-	-		399
	"	7'		X		-	-	-	-	-	-	-		<200
	"	10'		X		-	-	-	-	-	-	-		422
	"	15'		X		-	-	-	-	-	-	-		413
	"	20'		X		-	-	-	-	-	-	-		554
	"	25'		X		-	-	-	-	-	-	-		404
	"	30'		X		-	-	-	-	-	-	-		291
AH-3	6/23/10	0-1'			X	<50.0	<2.00	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.02	1850
2'														
SB-5	8/18/10	1'			X	3,060	<20.0	3,060	<0.200	<0.200	0.204	0.815		3,460
2'	"	3'		X		-	-	-	-	-	-	-		2,520
	"	5'		X		-	-	-	-	-	-	-		385
	"	7'		X		-	-	-	-	-	-	-		208
	"	10'		X		-	-	-	-	-	-	-		532
	"	15'		X		-	-	-	-	-	-	-		449
	"	20'		X		-	-	-	-	-	-	-		319
AH-4	6/23/10	0-1'			X	<50.0	<2.00	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.02	6220
2'		1-1.5'			X	-	-	-	-	-	-	-	-	3140
		2-2.5'		X		-	-	-	-	-	-	-	-	614
		3-3.5'		X		-	-	-	-	-	-	-	-	287
AH-5	6/23/10	0-1'			X	<50.0	<2.00	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.02	1650
2'		1-1.5'			X	-	-	-	-	-	-	-	-	3240
SB-6	8/18/10	1'			X	<50.0	<2.00	<50.0	<0.0200	<0.0200	<0.0200	<0.0200		<200
2'	"	3'		X		-	-	-	-	-	-	-		<200
	"	5'		X		-	-	-	-	-	-	-		2,180
	"	7'		X		-	-	-	-	-	-	-		981
	"	10'		X		-	-	-	-	-	-	-		342
	"	15'		X		-	-	-	-	-	-	-		250
	"	20'		X		-	-	-	-	-	-	-		234

Table 1
COG Operating LLC.
SENM SWD System
Spill #1
Eddy COUNTY, NEW MEXICO

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	BTEX Total	Chloride (mg/kg)
				In-Situ	Removed	DRO	GRO	Total						
AH-6	6/23/10	0-1'			X	<50.0	<2.00	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.02	2420
2'														
SB-7	8/18/10	1'			X	<50.0	<2.00	<50.0	-	-	-	-		3,470
2'	"	3'		X		-	-	-	-	-	-	-		4,150
	"	5'		X		-	-	-	-	-	-	-		614
	"	7'		X		-	-	-	-	-	-	-		594
	"	10'		X		-	-	-	-	-	-	-		468
	"	15'		X		-	-	-	-	-	-	-		253
	"	20'		X		-	-	-	-	-	-	-		287
	"	25'		X		-	-	-	-	-	-	-		<200
	"	30'		X		-	-	-	-	-	-	-		292
AH-7	6/23/10	0-1'			X	<50.0	<2.00	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.02	2800
3.5		1-1.5'			X	-	-	-	-	-	-	-	-	4880
		2-2.5'			X	-	-	-	-	-	-	-	-	6240
SB-8	8/18/10	1'			X	<50.0	<2.00	<50.0	-	-	-	-		863
3.5	"	3'			X	-	-	-	-	-	-	-		1,430
	"	5'		X		-	-	-	-	-	-	-		1,900
	"	7'		X		-	-	-	-	-	-	-		1,260
	"	10'		X		-	-	-	-	-	-	-		456
	"	15'		X		-	-	-	-	-	-	-		739
	"	20'		X		-	-	-	-	-	-	-		481
	"	25'		X		-	-	-	-	-	-	-		496
	"	30'		X		-	-	-	-	-	-	-		337
	"	40'		X		-	-	-	-	-	-	-		<200

BEB Below Excavation Bottom

(--) Not Analyzed

Excavated Depths

Table 2
COG Operating LLC.
SENM SWD System
Spill #2
Eddy COUNTY, NEW MEXICO

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	DRO	GRO	Total					
SB-1	2/25/11	0-1'		X	<50.0	6.69	6.69	<0.0200	<0.0200	0.140	0.391	15,400
3' cap	"	3'		X	-	-	-	-	-	-	-	5,170
	"	5'	X		-	-	-	-	-	-	-	4,380
	"	7'	X		-	-	-	-	-	-	-	569
	"	10'	X		-	-	-	-	-	-	-	489
	"	15'	X		-	-	-	-	-	-	-	359
	"	20'	X		-	-	-	-	-	-	-	250
SB-2	2/25/11	0-1'		X	<50.0	<2.00	<50.0	-	-	-	-	6,040
3'	"	3'		X	-	-	-	-	-	-	-	3,360
	"	5'	X		-	-	-	-	-	-	-	405
	"	7'	X		-	-	-	-	-	-	-	207
	"	10'	X		-	-	-	-	-	-	-	281
	"	15'	X		-	-	-	-	-	-	-	252
	"	20'	X		-	-	-	-	-	-	-	232
SB-3	2/25/11	0-1		X	<50.0	<2.00	<50.0	-	-	-	-	498
2'	"	3'	X		-	-	-	-	-	-	-	2,310
	"	5'	X		-	-	-	-	-	-	-	957
	"	7'	X		-	-	-	-	-	-	-	<200
	"	10'	X		-	-	-	-	-	-	-	249
	"	15'	X		-	-	-	-	-	-	-	234
	"	20'	X		-	-	-	-	-	-	-	<200
SB-4	3/1/11	0-1'		X	<50.0	<2.00	<50.0	-	-	-	-	1,210
2'	"	3'	X		-	-	-	-	-	-	-	1,290
	"	5'	X		-	-	-	-	-	-	-	857
	"	7'	X		-	-	-	-	-	-	-	717
	"	10'	X		-	-	-	-	-	-	-	339
	"	15'	X		-	-	-	-	-	-	-	204
	"	20'	X		-	-	-	-	-	-	-	<200

Table 2
COG Operating LLC.
SENM SWD System
Spill #2
Eddy COUNTY, NEW MEXICO

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	DRO	GRO	Total					
SB-5	3/1/11	0-1'		X	3,530	1,730	5,260	2.86	82.8	64.8	86.0	5,300
2'	"	3'		X	2960	2850	5810	3.60	75.1	69.9	89.6	5,180
	"	5'	X		252	287	539	<0.100	0.602	3.71	6.61	3,680
	"	7'	X		-	-	-	-	-	-	-	1,300
	"	10'	X		-	-	-	-	-	-	-	<200
	"	15'	X		-	-	-	-	-	-	-	<200
	"	20'	X		-	-	-	-	-	-	-	235
SB-6	3/1/11	0-1'		X	3,870	1,530	5,400	<0.200	3.16	17.8	34.7	<200
2'	"	3'	X		<50.0	<2.00	<50.0	<0.0200	0.159	<0.0200	<0.0200	2,010
	"	5'	X		-	-	-	-	-	-	-	1,000
	"	7'	X		-	-	-	-	-	-	-	418
	"	10'	X		-	-	-	-	-	-	-	354
	"	15'	X		-	-	-	-	-	-	-	251
	"	20'	X		-	-	-	-	-	-	-	<200
	"	25'	X		-	-	-	-	-	-	-	221
	"	30'	X		-	-	-	-	-	-	-	320
SB-7	3/1/11	0-1'		X	10,800	3,640	14,440	5.25	86.5	87.6	120	1,080
2'	"	3'	X		1560	1240	2800	1.37	46.9	39.5	63.7	4,180
	"	5'	X		<50.0	<2.00	<50.0	<0.0200	<0.0200	0.15	<0.0200	2,500
	"	7'	X		-	-	-	-	-	-	-	419
	"	10'	X		-	-	-	-	-	-	-	792
	"	15'	X		-	-	-	-	-	-	-	324
	"	20'	X		-	-	-	-	-	-	-	<200
	"	25'	X		-	-	-	-	-	-	-	279
	"	30'	X		-	-	-	-	-	-	-	<200

(--) Not Analyzed

Excavation Depths

Clay Liner Installed

Table 3
COG Operating LLC.
North West Central Tank Battery
Spill #3
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	Total						
AH-1	7/31/2012	0-1		X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	430
3.5 cap	"	1-1.5		X	-	-	-	-	-	-	-	-	860
	"	2-2.5		X	-	-	-	-	-	-	-	-	2,460
	"	3-3.5		X	-	-	-	-	-	-	-	-	1,500
	"	4-4.5	X		-	-	-	-	-	-	-	-	2,650
AH-2	7/31/2012	0-1		X	<4.00	385	385	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	3,850
3.5 cap	"	1-1.5		X	-	-	-	-	-	-	-	-	2,780
	"	1.5-2		X	-	-	-	-	-	-	-	-	1,840
BH-1	9/11/2012	0-1		X	-	-	-	-	-	-	-	-	8,770
3.5 cap	"	2-3		X	-	-	-	-	-	-	-	-	7,450
	"	4-5	X		-	-	-	-	-	-	-	-	2,790
	"	6-7	X		-	-	-	-	-	-	-	-	413
	"	9-10	X		-	-	-	-	-	-	-	-	399
	"	14-15	X		-	-	-	-	-	-	-	-	82.7
	"	19-20	X		-	-	-	-	-	-	-	-	157

Table 3
COG Operating LLC.
North West Central Tank Battery
Spill #3
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	Total						
AH-3 deferred	7/31/2012	0-1	X		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	2,600
	"	1-1.5	X		-	-	-	-	-	-	-	-	2,730
	"	2-2.5	X		-	-	-	-	-	-	-	-	2,850
	"	3-3.5	X		-	-	-	-	-	-	-	-	3,830
	"	4-4.5	X		-	-	-	-	-	-	-	-	3,630
	"	5-5.5	X		-	-	-	-	-	-	-	-	1,850
BH-2 deferred	9/11/2012	0-1		X	-	-	-	-	-	-	-	-	955
	"	2-3		X	-	-	-	-	-	-	-	-	3,800
	"	4-5	X		-	-	-	-	-	-	-	-	2,260
	"	6-7	X		-	-	-	-	-	-	-	-	118
	"	9-10	X		-	-	-	-	-	-	-	-	44.3
AH-4 deferred	7/31/2012	0-1		X	<4.00	76.3	76.3	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	5,650
	"	1-1.5	X		-	-	-	-	-	-	-	-	6,430
	"	2-2.5	X		-	-	-	-	-	-	-	-	2,060
	"	3-3.5	X		-	-	-	-	-	-	-	-	443
	"	4-4.5	X		-	-	-	-	-	-	-	-	231
	"	5-5.5	X		-	-	-	-	-	-	-	-	636

(-) Not Analyzed

Excavation Depths

Clay Liner Installed

Table 4
COG Operating LLC.
Northwest Central Tank Battery
Eddy County, New Mexico

Sample ID		Sample Date	Sample Depth (ft)	Soil Status		Chloride (mg/kg)
				In-Situ	Removed	
CS-1	AH-1 (3rd Spill) South Side Wall	2/20/2014	-	X		680
	AH-1 (3rd Spill) East Side Wall	"	-	X		5,920
	AH-1 (3rd Spill) West Side Wall	"	-	X		593
Clay Cap	AH-1 (3rd Spill) Bottom Hole	"	-	X		515
CS-2	AH-2 (3rd Spill) North Side Wall	2/20/2014	-	X		11,900
	AH-2 (3rd Spill) East Side Wall	"	-	X		17,400
Clay Cap	AH-2 (3rd Spill) Bottom Hole	"	-	X		195
CS-3	SB-1 (2nd Spill) North Side Wall	2/25/2014	-	X		2,650
	SB-1 (2nd Spill) West Side Wall	"	-	X		2,110
	SB-1 (2nd Spill) East Side Wall	"	-	X		48.7
Clay Cap	SB-1 (2nd Spill) Bottom Hole	"	-	X		3,230
CS-4	SB-2 (1st Spill) West Side Wall	2/25/2014	-	X		2,680
	SB-2 (1st Spill) Bottom Hole	"	-	X		1,170
CS-5	SB-2 (2nd Spill) East Side Wall	2/25/2014	-	X		468
	SB-2 (2nd Spill) Bottom Hole	"	-	X		516
CS-6	SB-3 (1st Spill) West Side Wall	2/25/2014	-	X		1,140
	SB-3 (1st Spill) Bottom Hole	"	-	X		916
CS-7	SB-5 (1st Spill) North Side Wall	2/25/2014	-	X		82.9
	SB-5 (1st Spill) South Side Wall	"	-	X		848
	SB-5 (1st Spill) East Side Wall	"	-	X		575
	SB-5 (1st Spill) Bottom Hole	"	-	X		624

Table 4
COG Operating LLC.
Northwest Central Tank Battery
Eddy County, New Mexico

Sample ID		Sample Date	Sample Depth (ft)	Soil Status		Chloride (mg/kg)
				In-Situ	Removed	
* CS-8	SB-5 (2nd Spill) North Side Wall	3/6/2014	-	X		800
	SB-5 (2nd Spill) East Side Wall	"	-	X		1,200
	SB-5 (2nd Spill) Bottom Hole	"	-	X		900
* CS-9	AH-4 (1st Spill) East Side Wall	3/10/2014	-	X		500
	AH-4 (1st Spill) Bottom hole	"	-	X		900
* CS-10	AH-5 (1st Spill) West Side Wall	3/10/2014	-	X		500
	AH-5 (1st Spill) Bottom hole	"	-	X		750
* CS-11	SB-7 (1st Spill) West Side Wall	3/10/2014	-	X		550
	SB-7 (1st Spill) East Side Wall	"	-	X		600
	SB-7 (1st Spill) Bottom Hole 2'	"		X		1,600
	SB-7 (1st Spill) Bottom Hole 3'	"	-	X		600
* CS-12	SB-8 (1st Spill) West Side Wall	3/10/2014	-	X		500
	SB-8 (1st Spill) East Side Wall	"	-	X		650
	SB-8 (1st Spill) South Side Wall	"	-	X		450
	SB-8 (1st Spill) Bottom Hole	"	-	X		1,000

(-) Not Analyzed

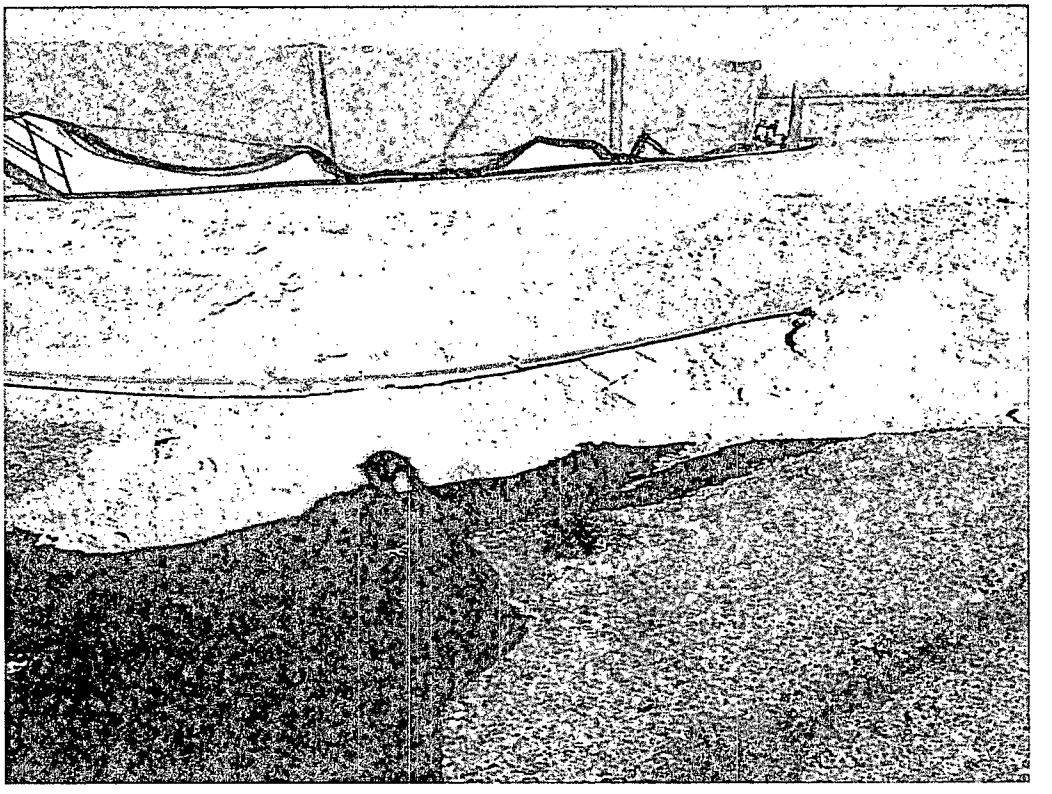
(BEB) Below Excavation Bottom

* CS Field Chlorides

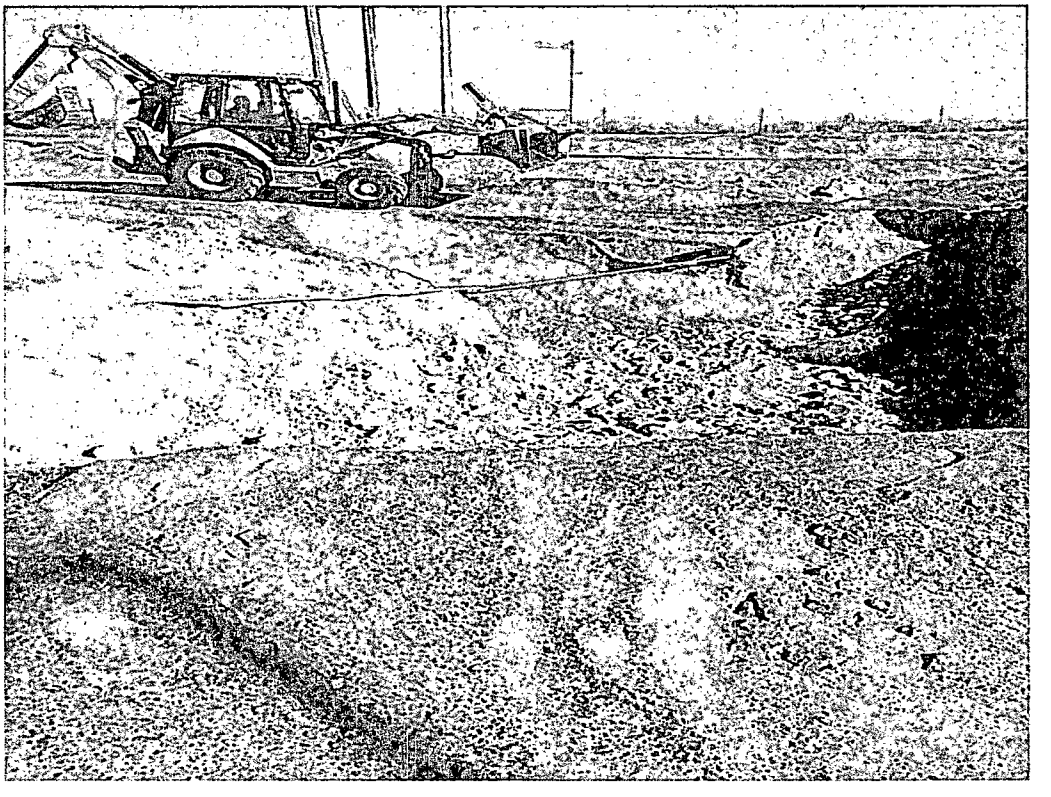
Photos

COG Operating LLC
SENM SWD System
Eddy County, New Mexico

TETRA TECH



View Northwest – Area of AH-1 (Spill 3) at 3.0'

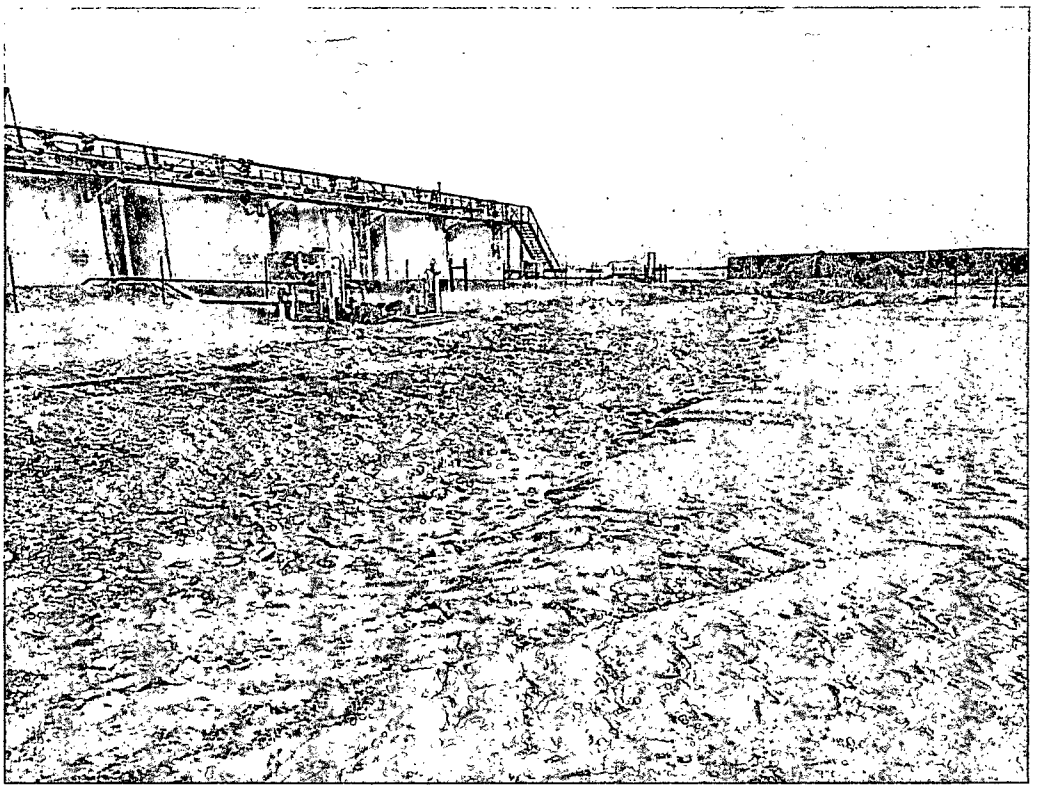


View North – Area of AH-2 (Spill 3) being Backfilled

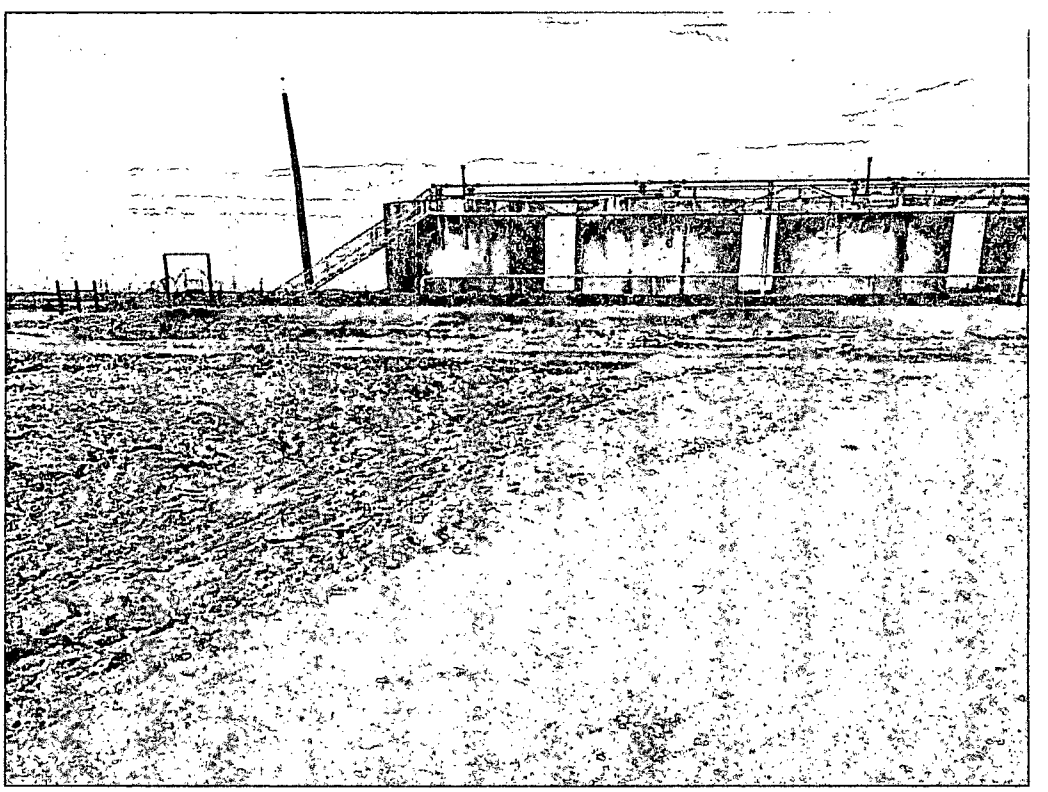
COG Operating LLC
SENM SWD System
Eddy County, New Mexico

View North – Areas of AH-1 and AH-2 (Spill 3) Backfilled

View North – Area of SB-1 (Spill 2) at 3.0'



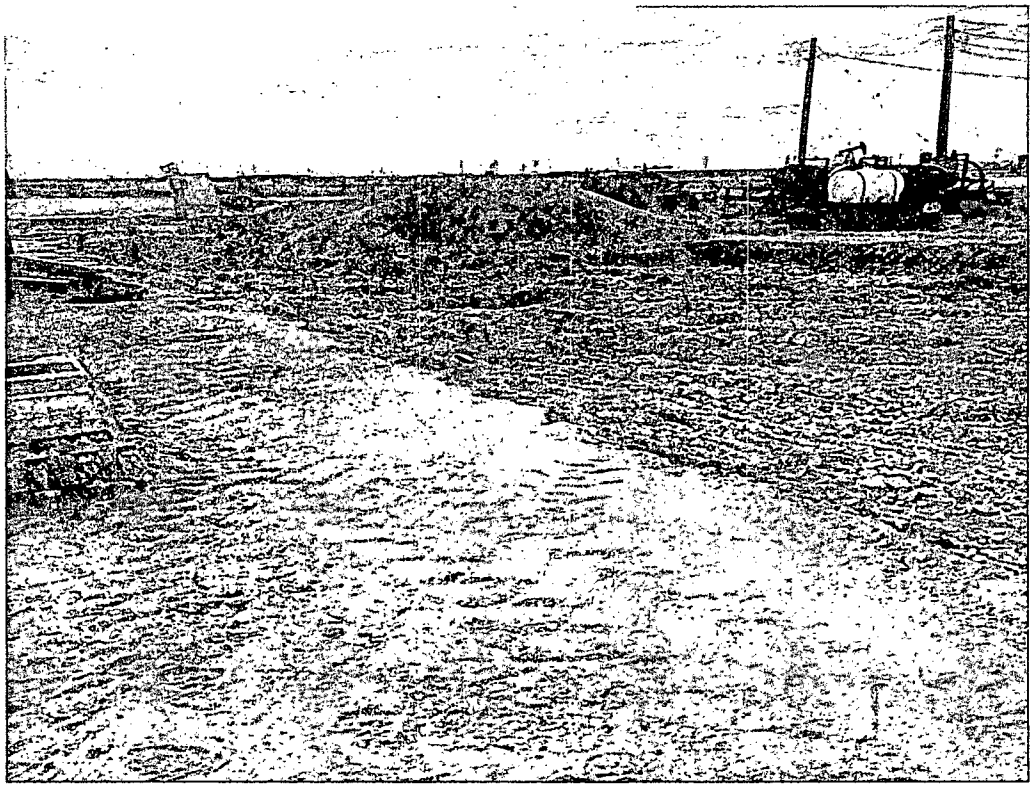
View North – Areas of SB-2 (Spill 1 and Spill 2) at 2.0'



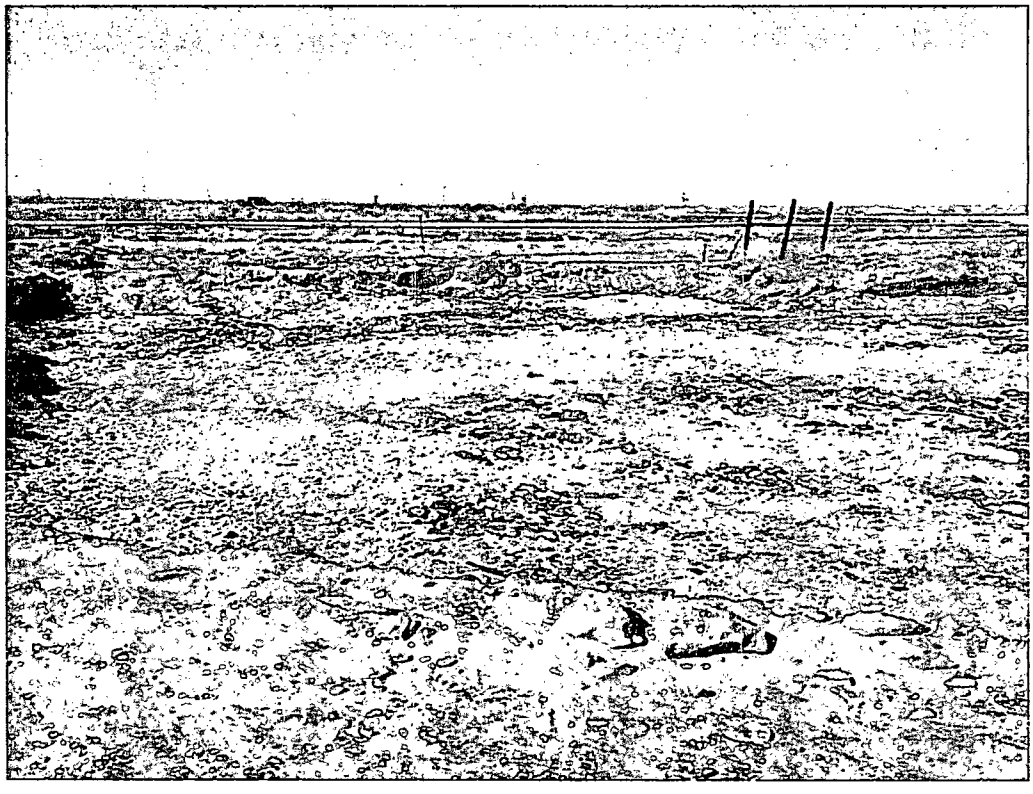
View West – Areas of SB-3 and SB-4 (Spill 1) at 1.0' and 2.0' Respectively

COG Operating LLC
SENM SWD System
Eddy County, New Mexico

TETRA TECH



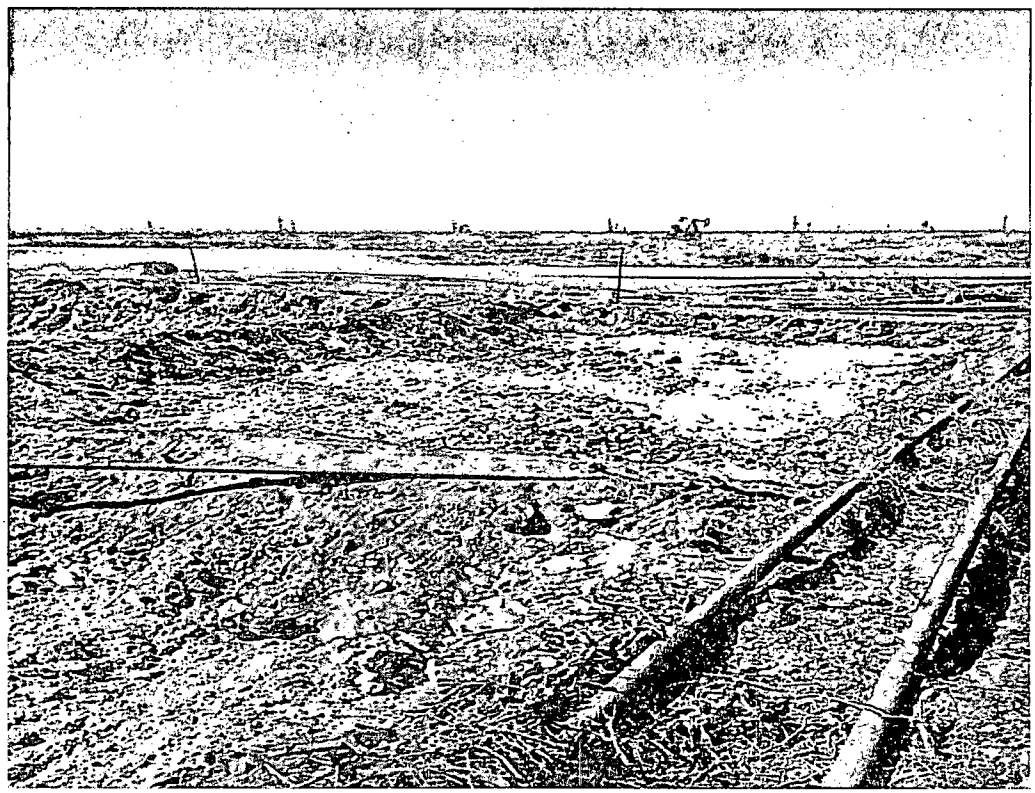
View East – Area of AH-3 and SB-5 (Spill 1) at 2.0'



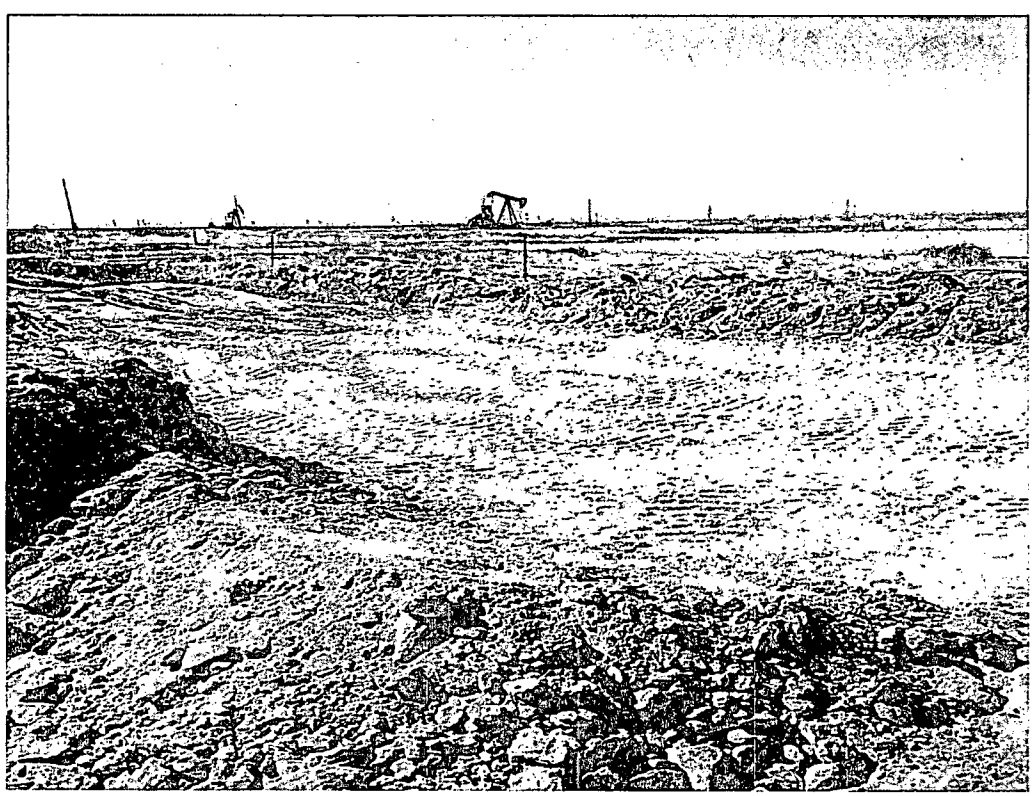
View West – Areas of AH-4 and AH-5 (Spill 2) at 3.0'

COG Operating LLC
SENM SWD System
Eddy County, New Mexico

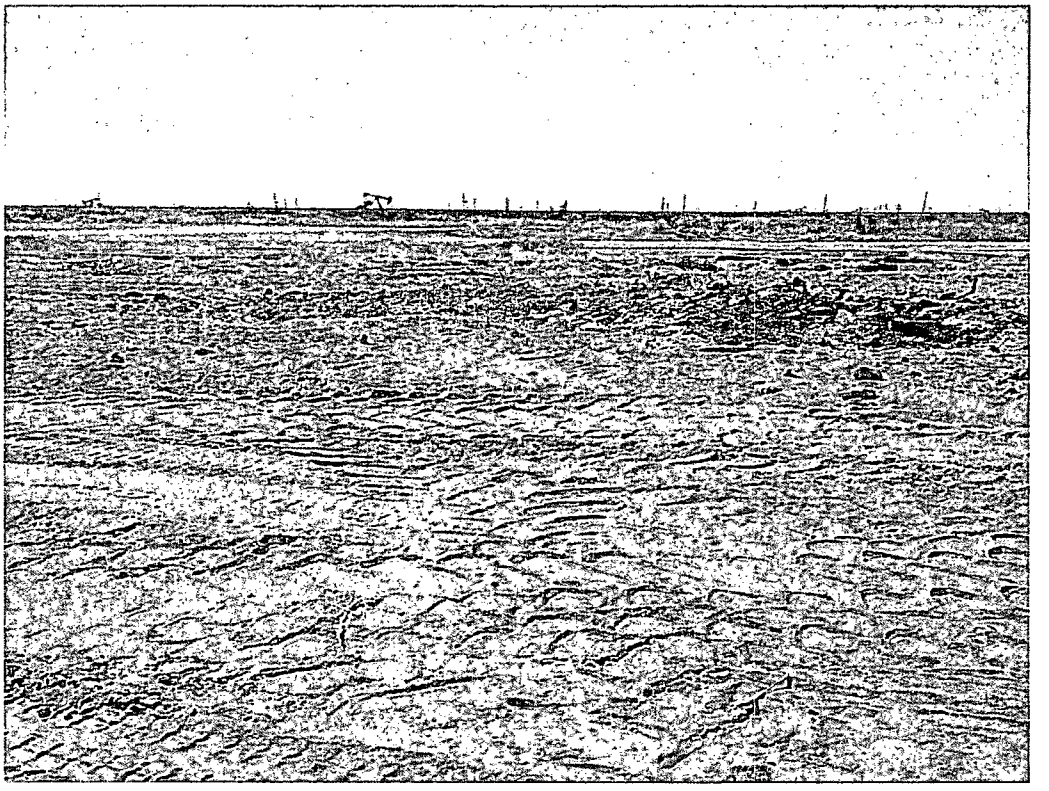
TETRA TECH



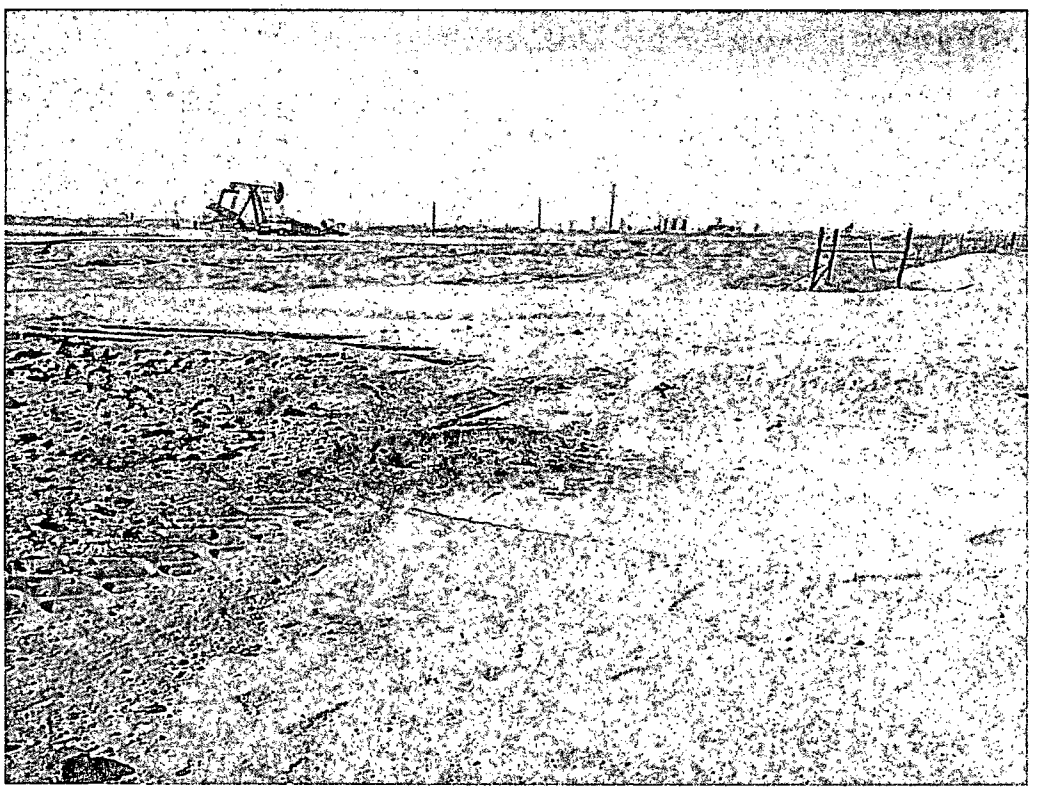
View East – Area of SB-7 (Spill 1) at 2.0'



View Southwest – Area of AH-6 and SB-7 (Spill 1) at 3.5



View West – Area of AH-6 and SB-7 (Spill 1) Backfilled



View North – Area of AH-5 and SB-6 (Spill 1) Backfilled

Appendix A

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company **COG Operating LLC**	Contact **Robert McNeill**
Address **600 W. Illinois Ave, Midland, Texas 79701**	Telephone No. **(432) 685-4332**
Facility Name **SENM SWD System (Northwest Central)**	Facility Type **Tank Battery**

Surface Owner: Federal	Mineral Owner	Lease No. (API#)

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
N	17	17S	30E					Eddy

Latitude 32.853001° N **Longitude** 103.959150° W

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release 300 bbls	Volume Recovered 200 bbls
Source of Release: 6" produced water transmission line	Date and Hour of Occurrence 5/12/2010	Date and Hour of Discovery 5/12/2010 5:00pm
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? **Mike Bratcher – OCD, Terry Gregston - BLM**	
By Whom? Josh Russo	Date and Hour 5/13/2010 4:09pm	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*

N/A

Describe Cause of Problem and Remedial Action Taken.*

The cause of the release was due to the failure of a poly weld on a 6" produced water transmission line. The line was immediately repaired and put back into service.

Describe Area Affected and Cleanup Action Taken.*

Initially 300bbls of produced water was released and COG was able to recover 200bbls with a vacuum truck. The main area of the release on the pad location measured 150' x 130'. A stream then headed south on the pad with the dimensions of 5' x 100' before heading off the south end of the pad and into the pasture. Tetra Tech inspected site and collected samples to define spills extent. Soil that exceeded RRAL was removed and hauled away for proper disposal. Site was then brought up to surface grade with clean backfill material. Tetra Tech prepared closure report and submitted to NMOCD for review.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature:	OIL CONSERVATION DIVISION
Printed Name: Ike Tavarez	Approved by District Supervisor:
Title: Project Manager	Approval Date: / Expiration Date:
E-mail Address: Ike.Tavarez@TetraTech.com	Conditions of Approval: / Attached ☐
Date: 5-15-14 Phone: (432) 682-4559	

Attach Additional Sheets If Necessary

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
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State of New Mexico
Energy Minerals and Natural Resources

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1220 South St. Francis Dr.
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Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company **COG Operating LLC**	Contact **Robert McNeill**
Address **600 W. Illinois Ave, Midland, Texas 79701**	Telephone No. **(432) 685-4332**
Facility Name **McIntyre DK Fed (Northwest Central)**	Facility Type **Tank Battery**

Surface Owner: Federal	Mineral Owner	Lease No. (API#) NMNM-86025

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
N	17	17S	30E					Eddy

Latitude 32 49.804° N **Longitude** 103 59.782° W

NATURE OF RELEASE

Type of Release: Oil	Volume of Release 23 bbls	Volume Recovered 20 bbls
Source of Release: Oil Tank	Date and Hour of Occurrence 12/15/2010	Date and Hour of Discovery 12/15/2010 8:00am
Was Immediate Notice Given? ☐ Yes ☒ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*

N/A

Describe Cause of Problem and Remedial Action Taken.*

The equalizer line was plugged causing the oil tank to overflow. The plugged equalizer line has been cleaned out.

Describe Area Affected and Cleanup Action Taken.*

Initially 23bbls of oil was released from the oil tank and COG was able to recover 20bbls with a vacuum truck. The oil traveled south on the pad location 3' x 100', and then off the pad roughly 30' towards a prior spill location. Tetra Tech inspected site and collected samples to define spills extent. Soil that exceeded RRAL was removed and hauled away for proper disposal. Site was then brought up to surface grade with clean backfill material. Tetra Tech prepared closure report and submitted to NMOCD for review.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature:	OIL CONSERVATION DIVISION	
Printed Name: Ike Tavarez	Approved by District Supervisor:	
Title: Project Manager	Approval Date:	Expiration Date:
E-mail Address: Ike.Tavarez@TetraTech.com	Conditions of Approval:	Attached ☐
Date: 5-19-14 Phone: (432) 682-4559		

* Attach Additional Sheets If Necessary

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company **COG Operating LLC**	Contact **Robert McNeill**
Address **600 W. Illinois Ave, Midland, Texas 79701**	Telephone No. **(432) 685-4332**
Facility Name **Northwest Central Tank Battery**	Facility Type **Tank Battery**

Surface Owner: Federal	Mineral Owner	Lease No. (API#)30-015-20972

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
N	17	17S	30E					Eddy

Latitude 32 49.817° N **Longitude** 103 59.765° W

NATURE OF RELEASE

Type of Release: Oil and Produced Water	Volume of Release 160 bbls	Volume Recovered 145 bbls
Source of Release: 10,000bbl open top tank	Date and Hour of Occurrence 06/25/2012	Date and Hour of Discovery 06/25/2012 9:52am
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? **Mike Bratcher – OCD, Jim Amos – BLM, Terry Gregston - BLM**	
By Whom? Michelle Mullins	Date and Hour 06/26/2012 10:02am	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*

N/A

RECEIVED
JUN 04 2014
NMOCD ARTESIA

Describe Cause of Problem and Remedial Action Taken.*

10,000bbl open top tank overflowed due to water being diverted to open top instead of tank battery, along with an electrical error on alarm system. The valve has been changed to divert water to the correct Northwest Central tanks and the electrical issue has been corrected

Describe Area Affected and Cleanup Action Taken.*

Initially 800 bbls of fluid were released from the open top water tank and COG was able to recover 700 bbls with a vacuum truck. The spill was contained on the pad location surrounding the tank and measured an area of roughly 125' x 200'. Tetra Tech inspected site and collected samples to define spills extent. Soil that exceeded RRAL was removed and hauled away for proper disposal. Site was then brought up to surface grade with clean backfill material. Tetra Tech prepared closure report and submitted to NMOCD for review.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature:	OIL CONSERVATION DIVISION	
Printed Name: Ike Tavarez (Agent for COG)	Approved by District Supervisor:	
Title: Project Manager	Approval Date:	Expiration Date:
E-mail Address: Ike.Tavarez@TetraTech.com	Conditions of Approval:	Attached ☐
Date: 5-15-14 Phone: (432) 682-4559		

Attach Additional Sheets If Necessary

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
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State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
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Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	COG OPERATING LLC	Contact	Pat Ellis
Address	550 W. Texas, Suite 100, Midland, TX 79701	Telephone No.	432-230-0077
Facility Name	SENM SWD System (Northwest Central)	Facility Type	Tank Battery

Surface Owner Federal	Mineral Owner	Lease No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
N	17	17S	30E					Eddy

Latitude 32 49.840 Longitude 103 59.763

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release: 300bbls	Volume Recovered: 200bbls
Source of Release: 6" produced water transmission line	Date and Hour of Occurrence: 05/12/2010	Date and Hour of Discovery: 05/12/2010 5:00 p.m.
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher – OCD; Terry Gregston – BLM	
By Whom? Josh Russo	Date and Hour 05/13/2010 4:09 p.m.	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

The cause of the release was due to the failure of a poly weld on a 6" produced water transmission line. The line was immediately repaired and put back into service.

Describe Area Affected and Cleanup Action Taken.*

Initially 300bbls or produced water was released and we were able to recover 200bbls with a vacuum truck. The main area of the release on the pad location had the dimensions of 150'x130'. A stream then headed south on the pad location with the dimensions of 5'x100' before heading off the south end of the pad and into the pasture. The stream into the pasture went roughly 170'. (The closest well location to the release is the MCINTYRE DK FEDERAL #3, Unit N, 17-17S-30E, 660 FSL 1980 FWL, 32.82917 – 103.99629, API# 30-015-04186) Tetra Tech will sample the spill site area to delineate any possible contamination from the release and we will present a remediation work plan to the BLM / NMOCD for approval before any significant remediation.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature:	OIL CONSERVATION DIVISION
Printed Name: Josh Russo	Approved by District Supervisor:
Title: HSE Coordinator	Approval Date: / Expiration Date:
E-mail Address: jrusso@conchoresources.com	Conditions of Approval: / Attached ☐
Date: 05/21/2010 Phone: 432-212-2399	

* Attach Additional Sheets If Necessary

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

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Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	COG OPERATING LLC	Contact	Pat Ellis
Address	550 W. Texas, Suite 100, Midland, TX 79701	Telephone No.	432-230-0077
Facility Name	McIntyre DK Federal (Northwest Central)	Facility Type	Tank Battery

Surface Owner Federal	Mineral Owner	Lease No. NMNM-86025

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
N	17	17S	30E					Eddy

Latitude 32 49.804 Longitude 103 59.782

NATURE OF RELEASE

Type of Release Oil	Volume of Release 23bbls	Volume Recovered 20bbls
Source of Release Oil Tank	Date and Hour of Occurrence 12/15/2010	Date and Hour of Discovery 12/15/2010 8:00a.m.
Was Immediate Notice Given? ☐ Yes ☒ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

The equalizer line was plugged causing the oil tank to overflow. The plugged equalizer line has been cleaned out.

Describe Area Affected and Cleanup Action Taken.*

Initially 23bbls of oil was released from the oil tank and we were able to recover 20bbls with a vacuum truck. The oil traveled south on the pad location 3' x 100', and then off the pad roughly 30' towards a prior spill location. All oil has been picked up with a vacuum truck, pad material has been scraped of contaminates, tanks and lines have been steamed. (Well location on the same pad, McIntyre Federal #6, (API#) 30-015-20972).

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature:	OIL CONSERVATION DIVISION	
Printed Name: Josh Russo	Approved by District Supervisor:	
Title: HSE Coordinator	Approval Date:	Expiration Date:
E-mail Address: jrusso@conchoresources.com	Conditions of Approval:	Attached ☐
Date: 12/17/2010 Phone: 432-212-2399		

* Attach Additional Sheets If Necessary

Dan ??

#1452

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
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1000 Rio Brazos Road, Aztec, NM 87410
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Energy Minerals and Natural Resources

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1220 South St. Francis Dr.
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Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	COG OPERATING LLC	Contact	Pat Ellis
Address	550 W. Texas, Suite 100, Midland, TX 79701	Telephone No.	432-230-0077
Facility Name	Northwest Central Tank Battery	Facility Type	Tank Battery

Surface Owner Federal	Mineral Owner	Lease No. (API#) 30-015-20972 McIntyre Federal #6 - Closest well

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North South Line	Feet from the	East/West Line	County
N	17	17S	30E					Eddy

Latitude 32 49.817 **Longitude** 103 59.765

NATURE OF RELEASE

Type of Release Oil and Produced water	Volume of Release 700bbls oil 100bbls produced water	Volume Recovered 650bbls oil 50bbls produced water
Source of Release 10,000bbl open top tank	Date and Hour of Occurrence 06 25 2012	Date and Hour of Discovery 06 25 2012 9:52 a.m.
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher-OCD Jim Amos-BLM Terry Gregston-BLM	
By Whom? Michelle Mullins	Date and Hour 06/26/2012 10:02 a.m.	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

10,000 bbl open top tank at the Northwest Central Tank Battery overflowed due to water being diverted to open top instead of tank battery; Along with an electrical error on alarm system. The valve has been changed to divert water to the correct Northwest Central tanks and the electrical issue has been corrected.

Describe Area Affected and Cleanup Action Taken.*

Initially 800bbls of fluid were released from the open top water tank and we were able to recover 700bbls with a vacuum truck. The entire spill was contained on the pad location surrounding the tank and measured an area of roughly 125' x 200'. Tetra Tech will sample the spill site area to delineate any possible contamination from the release and we will present a remediation work plan to the NMOCD / BLM for approval prior to any significant remediation work.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature:	OIL CONSERVATION DIVISION	
Printed Name: Josh Russo	Approved by District Supervisor:	
Title: HSE Coordinator	Approval Date:	Expiration Date:
E-mail Address: jrusso@conchoresources.com	Conditions of Approval:	Attached ☐
Date: 06 29/2012 Phone: 432-212-2399		

* Attach Additional Sheets If Necessary

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
SENM SWD System (Northwest Central)
Eddy County, New Mexico

16 South 29 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14 220 dry	13
19 **110**	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

16 South 30 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

16 South 31 East

6	5	4	3	2 **290**	1
7	8	9	10	11	12 **288**
18	17	16	15	14 **113** **314**	13 **299**
19	20	21	22	23	24
30	29	28	27	26	25
31 **290**	32	33	34	35	36

17 South 29 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22 **76** **80**	23	24
30	29 **210** **208**	28	27	26	25
31	32	33	34	35 153	36

17 South 30 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17 **Site**	16	15	14	13
19	20 **80**	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

17 South 31 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34 **271**	35	36

18 South 29 East

6	5	4	3	2	1
7	8	9	10 **95**	11	12
18	17	16	15	14	13
19	20	21	22	23	24 **158**
30	29	28	27	26	25
31	32	33	34	35	36

18 South 30 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23 **44**	24
30	29	28	27	26	25
31	32	33	34	35	36

18 South 31 East

6	5	4	3	2	1
7	8	9	10	11	12 **400**
18	17	16	15 **98**	14 **317**	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35 **261**	36

- New Mexico State Engineers Well Reports
- USGS Well Reports
- Geology and Groundwater Conditions in Southern Eddy, County, NM
- NMOCD - Groundwater Data
- Field water level
- New Mexico Water and Infrastructure Data System

Appendix C

Summary Report

Ike Tavarez
Tetra Tech
1910 N. Big Spring Street
Midland, TX 79705

Report Date: July 2, 2010

Work Order: 10062804

Project Location: Eddy County, NM
Project Name: COG/SENM SWD System
Project Number: 114-6400547

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
235925	AH-1 0-1'	soil	2010-06-23	00:00	2010-06-25
235926	AH-1 1-1.5'	soil	2010-06-23	00:00	2010-06-25
235927	AH-1 2-2.5'	soil	2010-06-23	00:00	2010-06-25
235928	AH-2 0-1'	soil	2010-06-23	00:00	2010-06-25
235929	AH-2 1-1.5'	soil	2010-06-23	00:00	2010-06-25
235930	AH-2 2-2.5'	soil	2010-06-23	00:00	2010-06-25
235931	AH-2 3-3.5'	soil	2010-06-23	00:00	2010-06-25
235932	AH-2 4-4.5'	soil	2010-06-23	00:00	2010-06-25
235933	AH-2 5-5.5'	soil	2010-06-23	00:00	2010-06-25
235934	AH-2 6-6.5'	soil	2010-06-23	00:00	2010-06-25
235935	AH-2 7-7.5'	soil	2010-06-23	00:00	2010-06-25
235936	AH-2 8-8.5'	soil	2010-06-23	00:00	2010-06-25
235937	AH-3 0-1'	soil	2010-06-23	00:00	2010-06-25
235938	AH-4 0-1'	soil	2010-06-23	00:00	2010-06-25
235939	AH-4 1-1.5'	soil	2010-06-23	00:00	2010-06-25
235940	AH-4 2-2.5'	soil	2010-06-23	00:00	2010-06-25
235941	AH-4 3-3.5'	soil	2010-06-23	00:00	2010-06-25
235947	AH-5 0-1'	soil	2010-06-23	00:00	2010-06-25
235948	AH-5 1-1.5'	soil	2010-06-23	00:00	2010-06-25
235949	AH-6 0-1'	soil	2010-06-23	00:00	2010-06-25
235950	AH-7 0-1'	soil	2010-06-23	00:00	2010-06-25
235951	AH-7 1-1.5'	soil	2010-06-23	00:00	2010-06-25
235952	AH-7 2-2.5'	soil	2010-06-23	00:00	2010-06-25

	BTEX				TPH DRO - NEW	TPH GRO
Sample - Field Code	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
235925 - AH-1 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00

continued ...

... continued

Sample - Field Code	BTEX Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	TPH DRO - NEW DRO (mg/Kg)	TPH GRO GRO (mg/Kg)
235928 - AH-2 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
235937 - AH-3 0-1'	<0.100	<0.100	<0.100	<0.100	366	<10.0
235938 - AH-4 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
235947 - AH-5 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
235949 - AH-6 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
235950 - AH-7 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00

Sample: 235925 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		15800	mg/Kg	4.00

Sample: 235926 - AH-1 1-1.5'

Param	Flag	Result	Units	RL
Chloride		6220	mg/Kg	4.00

Sample: 235927 - AH-1 2-2.5'

Param	Flag	Result	Units	RL
Chloride		7440	mg/Kg	4.00

Sample: 235928 - AH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		4400	mg/Kg	4.00

Sample: 235929 - AH-2 1-1.5'

Param	Flag	Result	Units	RL
Chloride		6410	mg/Kg	4.00

Sample: 235930 - AH-2 2-2.5'

Param	Flag	Result	Units	RL
Chloride		7030	mg/Kg	4.00

Sample: 235931 - AH-2 3-3.5'

Param	Flag	Result	Units	RL
Chloride		5660	mg/Kg	4.00

Sample: 235932 - AH-2 4-4.5'

Param	Flag	Result	Units	RL
Chloride		3140	mg/Kg	4.00

Sample: 235933 - AH-2 5-5.5'

Param	Flag	Result	Units	RL
Chloride		2270	mg/Kg	4.00

Sample: 235934 - AH-2 6-6.5'

Param	Flag	Result	Units	RL
Chloride		1230	mg/Kg	4.00

Sample: 235935 - AH-2 7-7.5'

Param	Flag	Result	Units	RL
Chloride		314	mg/Kg	4.00

Sample: 235936 - AH-2 8-8.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 235937 - AH-3 0-1'

Param	Flag	Result	Units	RL
Chloride		1850	mg/Kg	4.00

Sample: 235938 - AH-4 0-1'

Param	Flag	Result	Units	RL
Chloride		6220	mg/Kg	4.00

Sample: 235939 - AH-4 1-1.5'

Param	Flag	Result	Units	RL
Chloride		3140	mg/Kg	4.00

Sample: 235940 - AH-4 2-2.5'

Param	Flag	Result	Units	RL
Chloride		614	mg/Kg	4.00

Sample: 235941 - AH-4 3-3.5'

Param	Flag	Result	Units	RL
Chloride		287	mg/Kg	4.00

Sample: 235947 - AH-5 0-1'

Param	Flag	Result	Units	RL
Chloride		1650	mg/Kg	4.00

Sample: 235948 - AH-5 1-1.5'

Param	Flag	Result	Units	RL
Chloride		3240	mg/Kg	4.00

Sample: 235949 - AH-6 0-1'

Param	Flag	Result	Units	RL
Chloride		2420	mg/Kg	4.00

Sample: 235950 - AH-7 0-1'

Param	Flag	Result	Units	RL
Chloride		2800	mg/Kg	4.00

Sample: 235951 - AH-7 1-1.5'

Param	Flag	Result	Units	RL
Chloride		4880	mg/Kg	4.00

Sample: 235952 - AH-7 2-2.5'

Param	Flag	Result	Units	RL
Chloride		6240	mg/Kg	4.00

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800-378-1296 806-794-1296 FAX 806-794-1298
200 East Sunset Road, Suite E El Paso, Texas 79922 915-585-3443 FAX 915-585-4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432-689-6301 FAX 432-689-6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972-242-7750
E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Ike Tavarez
Tetra Tech
1910 N. Big Spring Street
Midland, TX, 79705

Report Date: August 10, 2012

Work Order: 12080309

Project Location: Eddy Co., NM
Project Name: COG/NW Central Tank Battery (CTB)
Project Number: 114-6401452

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
305684	AH-1 0-1'	soil	2012-07-31	00:00	2012-08-02
305685	AH-1 1-1.5'	soil	2012-07-31	00:00	2012-08-02
305686	AH-1 2-2.5'	soil	2012-07-31	00:00	2012-08-02
305687	AH-1 3-3.5'	soil	2012-07-31	00:00	2012-08-02
305688	AH-1 4-4.5'	soil	2012-07-31	00:00	2012-08-02
305689	AH-2 0-1'	soil	2012-07-31	00:00	2012-08-02
305690	AH-2 1-1.5'	soil	2012-07-31	00:00	2012-08-02
305691	AH-2 1.5-2'	soil	2012-07-31	00:00	2012-08-02
305692	AH-3 0-1'	soil	2012-07-31	00:00	2012-08-02
305693	AH-3 1-1.5'	soil	2012-07-31	00:00	2012-08-02
305694	AH-3 2-2.5'	soil	2012-07-31	00:00	2012-08-02
305695	AH-3 3-3.5'	soil	2012-07-31	00:00	2012-08-02
305696	AH-3 4-4.5'	soil	2012-07-31	00:00	2012-08-02
305697	AH-3 5-5.5'	soil	2012-07-31	00:00	2012-08-02
305698	AH-4 0-1'	soil	2012-07-31	00:00	2012-08-02
305699	AH-4 1-1.5'	soil	2012-07-31	00:00	2012-08-02
305700	AH-4 2-2.5'	soil	2012-07-31	00:00	2012-08-02
305701	AH-4 3-3.5'	soil	2012-07-31	00:00	2012-08-02

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
305702	AH-4 4-4.5'	soil	2012-07-31	00:00	2012-08-02
305703	AH-4 5-5.5'	soil	2012-07-31	00:00	2012-08-02

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Summary Report

Ike Tavarez
Tetra Tech
1910 N. Big Spring Street
Midland, TX 79705

Report Date: August 10, 2012

Work Order: 12080309

Project Location: Eddy Co., NM
Project Name: COG/NW Central Tank Battery (CTB)
Project Number: 114-6401452

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
305684	AH-1 0-1'	soil	2012-07-31	00:00	2012-08-02
305685	AH-1 1-1.5'	soil	2012-07-31	00:00	2012-08-02
305686	AH-1 2-2.5'	soil	2012-07-31	00:00	2012-08-02
305687	AH-1 3-3.5'	soil	2012-07-31	00:00	2012-08-02
305688	AH-1 4-4.5'	soil	2012-07-31	00:00	2012-08-02
305689	AH-2 0-1'	soil	2012-07-31	00:00	2012-08-02
305690	AH-2 1-1.5'	soil	2012-07-31	00:00	2012-08-02
305691	AH-2 1.5-2'	soil	2012-07-31	00:00	2012-08-02
305692	AH-3 0-1'	soil	2012-07-31	00:00	2012-08-02
305693	AH-3 1-1.5'	soil	2012-07-31	00:00	2012-08-02
305694	AH-3 2-2.5'	soil	2012-07-31	00:00	2012-08-02
305695	AH-3 3-3.5'	soil	2012-07-31	00:00	2012-08-02
305696	AH-3 4-4.5'	soil	2012-07-31	00:00	2012-08-02
305697	AH-3 5-5.5'	soil	2012-07-31	00:00	2012-08-02
305698	AH-4 0-1'	soil	2012-07-31	00:00	2012-08-02
305699	AH-4 1-1.5'	soil	2012-07-31	00:00	2012-08-02
305700	AH-4 2-2.5'	soil	2012-07-31	00:00	2012-08-02
305701	AH-4 3-3.5'	soil	2012-07-31	00:00	2012-08-02
305702	AH-4 4-4.5'	soil	2012-07-31	00:00	2012-08-02
305703	AH-4 5-5.5'	soil	2012-07-31	00:00	2012-08-02

	BTEX				TPH DRO - NEW	TPH GRO
Sample - Field Code	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
305684 - AH-1 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00
305689 - AH-2 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	**385**	<4.00
305692 - AH-3 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00
305698 - AH-4 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	**76.3**	<4.00

Sample: 305684 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		**430**	mg/Kg	4

Sample: 305685 - AH-1 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**860**	mg/Kg	4

Sample: 305686 - AH-1 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**2460**	mg/Kg	4

Sample: 305687 - AH-1 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**1500**	mg/Kg	4

Sample: 305688 - AH-1 4-4.5'

Param	Flag	Result	Units	RL
Chloride		**2650**	mg/Kg	4

Sample: 305689 - AH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		**3850**	mg/Kg	4

Sample: 305690 - AH-2 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**2780**	mg/Kg	4

Sample: 305691 - AH-2 1.5-2'

Param	Flag	Result	Units	RL
Chloride		**1840**	mg/Kg	4

Sample: 305692 - AH-3 0-1'

Param	Flag	Result	Units	RL
Chloride		**2600**	mg/Kg	4

Sample: 305693 - AH-3 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**2730**	mg/Kg	4

Sample: 305694 - AH-3 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**2850**	mg/Kg	4

Sample: 305695 - AH-3 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**3830**	mg/Kg	4

Sample: 305696 - AH-3 4-4.5'

Param	Flag	Result	Units	RL
Chloride		**3630**	mg/Kg	4

Sample: 305697 - AH-3 5-5.5'

Param	Flag	Result	Units	RL
Chloride		**1850**	mg/Kg	4

Sample: 305698 - AH-4 0-1'

Param	Flag	Result	Units	RL
Chloride		**5650**	mg/Kg	4

Sample: 305699 - AH-4 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**6430**	mg/Kg	4

Sample: 305700 - AH-4 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**2060**	mg/Kg	4

Sample: 305701 - AH-4 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**443**	mg/Kg	4

Sample: 305702 - AH-4 4-4.5'

Param	Flag	Result	Units	RL
Chloride		**231**	mg/Kg	4

Sample: 305703 - AH-4 5-5.5'

Param	Flag	Result	Units	RL
Chloride		**636**	mg/Kg	4

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX LELAP-02003 Kansas E-10317 **El Paso:** T104704221-08-TX LELAP-02002 **Midland:** T104704392-08-TX

Analytical and Quality Control Report

Ike Tavarez
Tetra Tech
1910 N. Big Spring Street
Midland, TX, 79705

Report Date: August 30, 2010

Work Order: 10082003

Project Location: Eddy County, NM
Project Name: COG/SENM SWD System
Project Number: 114-6400547

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
241833	SB-1 1'	soil	2010-08-17	00:00	2010-08-20
241834	SB-1 3'	soil	2010-08-17	00:00	2010-08-20
241835	SB-1 5'	soil	2010-08-17	00:00	2010-08-20
241836	SB-1 7'	soil	2010-08-17	00:00	2010-08-20
241837	SB-1 10'	soil	2010-08-17	00:00	2010-08-20
241838	SB-1 15'	soil	2010-08-17	00:00	2010-08-20
241839	SB-1 20'	soil	2010-08-17	00:00	2010-08-20
241842	SB-2 1'	soil	2010-08-17	00:00	2010-08-20
241843	SB-2 3'	soil	2010-08-17	00:00	2010-08-20
241844	SB-2 5'	soil	2010-08-17	00:00	2010-08-20

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
241845	SB-2 7'	soil	2010-08-17	00:00	2010-08-20
241846	SB-2 10'	soil	2010-08-17	00:00	2010-08-20
241847	SB-2 15'	soil	2010-08-17	00:00	2010-08-20
241848	SB-2 20'	soil	2010-08-17	00:00	2010-08-20
241849	SB-3 1'	soil	2010-08-17	00:00	2010-08-20
241850	SB-3 3'	soil	2010-08-17	00:00	2010-08-20
241851	SB-3 5'	soil	2010-08-17	00:00	2010-08-20
241852	SB-3 7'	soil	2010-08-17	00:00	2010-08-20
241853	SB-3 10'	soil	2010-08-17	00:00	2010-08-20
241854	SB-3 15'	soil	2010-08-17	00:00	2010-08-20
241857	SB-4 1'	soil	2010-08-17	00:00	2010-08-20
241858	SB-4 3'	soil	2010-08-17	00:00	2010-08-20
241859	SB-4 5'	soil	2010-08-17	00:00	2010-08-20
241860	SB-4 7'	soil	2010-08-17	00:00	2010-08-20
241861	SB-4 10'	soil	2010-08-17	00:00	2010-08-20
241862	SB-4 15'	soil	2010-08-17	00:00	2010-08-20
241863	SB-4 20'	soil	2010-08-17	00:00	2010-08-20
241864	SB-4 25'	soil	2010-08-17	00:00	2010-08-20
241865	SB-4 30'	soil	2010-08-17	00:00	2010-08-20
241867	SB-5 1'	soil	2010-08-18	00:00	2010-08-20
241868	SB-5 3'	soil	2010-08-18	00:00	2010-08-20
241869	SB-5 5'	soil	2010-08-18	00:00	2010-08-20
241870	SB-5 7'	soil	2010-08-18	00:00	2010-08-20
241871	SB-5 10'	soil	2010-08-18	00:00	2010-08-20
241872	SB-5 15'	soil	2010-08-18	00:00	2010-08-20
241873	SB-5 20'	soil	2010-08-18	00:00	2010-08-20
241876	SB-6 1'	soil	2010-08-18	00:00	2010-08-20
241877	SB-6 3'	soil	2010-08-18	00:00	2010-08-20
241878	SB-6 5'	soil	2010-08-18	00:00	2010-08-20
241879	SB-6 7'	soil	2010-08-18	00:00	2010-08-20
241880	SB-6 10'	soil	2010-08-18	00:00	2010-08-20
241881	SB-6 15'	soil	2010-08-18	00:00	2010-08-20
241882	SB-6 20'	soil	2010-08-18	00:00	2010-08-20
241883	SB-7 1'	soil	2010-08-18	00:00	2010-08-20
241884	SB-7 3'	soil	2010-08-18	00:00	2010-08-20
241885	SB-7 5'	soil	2010-08-18	00:00	2010-08-20
241886	SB-7 7'	soil	2010-08-18	00:00	2010-08-20
241887	SB-7 10'	soil	2010-08-18	00:00	2010-08-20
241888	SB-7 15'	soil	2010-08-18	00:00	2010-08-20
241889	SB-7 20'	soil	2010-08-18	00:00	2010-08-20
241890	SB-7 25'	soil	2010-08-18	00:00	2010-08-20
241891	SB-7 30'	soil	2010-08-18	00:00	2010-08-20
241892	SB-8 1'	soil	2010-08-18	00:00	2010-08-20
241893	SB-8 3'	soil	2010-08-18	00:00	2010-08-20
241894	SB-8 5'	soil	2010-08-18	00:00	2010-08-20
241895	SB-8 7'	soil	2010-08-18	00:00	2010-08-20

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
241896	SB-8 10'	soil	2010-08-18	00:00	2010-08-20
241897	SB-8 15'	soil	2010-08-18	00:00	2010-08-20
241898	SB-8 20'	soil	2010-08-18	00:00	2010-08-20
241899	SB-8 25'	soil	2010-08-18	00:00	2010-08-20
241900	SB-8 30'	soil	2010-08-18	00:00	2010-08-20
241901	SB-8 40'	soil	2010-08-18	00:00	2010-08-20

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Standard Flags

B - The sample contains less than ten times the concentration found in the method blank.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
241868	SB-5 3'	soil	2010-08-18	00:00	2010-08-20
241869	SB-5 5'	soil	2010-08-18	00:00	2010-08-20
241870	SB-5 7'	soil	2010-08-18	00:00	2010-08-20
241871	SB-5 10'	soil	2010-08-18	00:00	2010-08-20
241872	SB-5 15'	soil	2010-08-18	00:00	2010-08-20
241873	SB-5 20'	soil	2010-08-18	00:00	2010-08-20
241876	SB-6 1'	soil	2010-08-18	00:00	2010-08-20
241877	SB-6 3'	soil	2010-08-18	00:00	2010-08-20
241878	SB-6 5'	soil	2010-08-18	00:00	2010-08-20
241879	SB-6 7'	soil	2010-08-18	00:00	2010-08-20
241880	SB-6 10'	soil	2010-08-18	00:00	2010-08-20
241881	SB-6 15'	soil	2010-08-18	00:00	2010-08-20
241882	SB-6 20'	soil	2010-08-18	00:00	2010-08-20
241883	SB-7 1'	soil	2010-08-18	00:00	2010-08-20
241884	SB-7 3'	soil	2010-08-18	00:00	2010-08-20
241885	SB-7 5'	soil	2010-08-18	00:00	2010-08-20
241886	SB-7 7'	soil	2010-08-18	00:00	2010-08-20
241887	SB-7 10'	soil	2010-08-18	00:00	2010-08-20
241888	SB-7 15'	soil	2010-08-18	00:00	2010-08-20
241889	SB-7 20'	soil	2010-08-18	00:00	2010-08-20
241890	SB-7 25'	soil	2010-08-18	00:00	2010-08-20
241891	SB-7 30'	soil	2010-08-18	00:00	2010-08-20
241892	SB-8 1'	soil	2010-08-18	00:00	2010-08-20
241893	SB-8 3'	soil	2010-08-18	00:00	2010-08-20
241894	SB-8 5'	soil	2010-08-18	00:00	2010-08-20
241895	SB-8 7'	soil	2010-08-18	00:00	2010-08-20
241896	SB-8 10'	soil	2010-08-18	00:00	2010-08-20
241897	SB-8 15'	soil	2010-08-18	00:00	2010-08-20
241898	SB-8 20'	soil	2010-08-18	00:00	2010-08-20
241899	SB-8 25'	soil	2010-08-18	00:00	2010-08-20
241900	SB-8 30'	soil	2010-08-18	00:00	2010-08-20
241901	SB-8 40'	soil	2010-08-18	00:00	2010-08-20

	BTEX				TPH DRO - NEW	TPH GRO
Sample - Field Code	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
241833 - SB-1 1'					<50.0	<2.00
241842 - SB-2 1'					<50.0	<2.00
241849 - SB-3 1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
241857 - SB-4 1'	<0.100	0.481	0.245	1.21	593	83.0
241867 - SB-5 1'	<0.200	<0.200	0.204	0.815	3060	<20.0
241876 - SB-6 1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
241883 - SB-7 1'					<50.0	<2.00
241892 - SB-8 1'					<50.0	<2.00

Sample: 241833 - SB-1 1'

Param	Flag	Result	Units	RL
Chloride		1870	mg/Kg	4.00

Sample: 241834 - SB-1 3'

Param	Flag	Result	Units	RL
Chloride		2780	mg/Kg	4.00

Sample: 241835 - SB-1 5'

Param	Flag	Result	Units	RL
Chloride		4380	mg/Kg	4.00

Sample: 241836 - SB-1 7'

Param	Flag	Result	Units	RL
Chloride		504	mg/Kg	4.00

Sample: 241837 - SB-1 10'

Param	Flag	Result	Units	RL
Chloride		248	mg/Kg	4.00

Sample: 241838 - SB-1 15'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 241839 - SB-1 20'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 241842 - SB-2 1'

Param	Flag	Result	Units	RL
Chloride		19400	mg/Kg	4.00

Sample: 241843 - SB-2 3'

Param	Flag	Result	Units	RL
Chloride		22800	mg/Kg	4.00

Sample: 241844 - SB-2 5'

Param	Flag	Result	Units	RL
Chloride		1350	mg/Kg	4.00

Sample: 241845 - SB-2 7'

Param	Flag	Result	Units	RL
Chloride		300	mg/Kg	4.00

Sample: 241846 - SB-2 10'

Param	Flag	Result	Units	RL
Chloride		230	mg/Kg	4.00

Sample: 241847 - SB-2 15'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 241848 - SB-2 20'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 241849 - SB-3 1'

Param	Flag	Result	Units	RL
Chloride		2440	mg/Kg	4.00

Sample: 241850 - SB-3 3'

Param	Flag	Result	Units	RL
Chloride		703	mg/Kg	4.00

Sample: 241851 - SB-3 5'

Param	Flag	Result	Units	RL
Chloride		234	mg/Kg	4.00

Sample: 241852 - SB-3 7'

Param	Flag	Result	Units	RL
Chloride		295	mg/Kg	4.00

Sample: 241853 - SB-3 10'

Param	Flag	Result	Units	RL
Chloride		337	mg/Kg	4.00

Sample: 241854 - SB-3 15'

Param	Flag	Result	Units	RL
Chloride		244	mg/Kg	4.00

Sample: 241857 - SB-4 1'

Param	Flag	Result	Units	RL
Chloride		6630	mg/Kg	4.00

Sample: 241858 - SB-4 3'

Param	Flag	Result	Units	RL
Chloride		8770	mg/Kg	4.00

Sample: 241859 - SB-4 5'

Param	Flag	Result	Units	RL
Chloride		399	mg/Kg	4.00

Sample: 241860 - SB-4 7'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 241861 - SB-4 10'

Param	Flag	Result	Units	RL
Chloride		422	mg/Kg	4.00

Sample: 241862 - SB-4 15'

Param	Flag	Result	Units	RL
Chloride		413	mg/Kg	4.00

Sample: 241863 - SB-4 20'

Param	Flag	Result	Units	RL
Chloride		554	mg/Kg	4.00

Sample: 241864 - SB-4 25'

Param	Flag	Result	Units	RL
Chloride		404	mg/Kg	4.00

Sample: 241865 - SB-4 30'

Param	Flag	Result	Units	RL
Chloride		291	mg/Kg	4.00

Sample: 241867 - SB-5 1'

Param	Flag	Result	Units	RL
Chloride		3460	mg/Kg	4.00

Sample: 241868 - SB-5 3'

Param	Flag	Result	Units	RL
Chloride		2520	mg/Kg	4.00

Sample: 241869 - SB-5 5'

Param	Flag	Result	Units	RL
Chloride		385	mg/Kg	4.00

Sample: 241870 - SB-5 7'

Param	Flag	Result	Units	RL
Chloride		208	mg/Kg	4.00

Sample: 241871 - SB-5 10'

Param	Flag	Result	Units	RL
Chloride		532	mg/Kg	4.00

Sample: 241872 - SB-5 15'

Param	Flag	Result	Units	RL
Chloride		449	mg/Kg	4.00

Sample: 241873 - SB-5 20'

Param	Flag	Result	Units	RL
Chloride		319	mg/Kg	4.00

Sample: 241876 - SB-6 1'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 241877 - SB-6 3'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 241878 - SB-6 5'

Param	Flag	Result	Units	RL
Chloride		2180	mg/Kg	4.00

Sample: 241879 - SB-6 7'

Param	Flag	Result	Units	RL
Chloride		981	mg/Kg	4.00

Sample: 241880 - SB-6 10'

Param	Flag	Result	Units	RL
Chloride		342	mg/Kg	4.00

Sample: 241881 - SB-6 15'

Param	Flag	Result	Units	RL
Chloride		250	mg/Kg	4.00

Sample: 241882 - SB-6 20'

Param	Flag	Result	Units	RL
Chloride		234	mg/Kg	4.00

Sample: 241883 - SB-7 1'

Param	Flag	Result	Units	RL
Chloride		3470	mg/Kg	4.00

Sample: 241884 - SB-7 3'

Param	Flag	Result	Units	RL
Chloride		4150	mg/Kg	4.00

Sample: 241885 - SB-7 5'

Param	Flag	Result	Units	RL
Chloride		614	mg/Kg	4.00

Sample: 241886 - SB-7 7'

Param	Flag	Result	Units	RL
Chloride		594	mg/Kg	4.00

Sample: 241887 - SB-7 10'

Param	Flag	Result	Units	RL
Chloride		468	mg/Kg	4.00

Sample: 241888 - SB-7 15'

Param	Flag	Result	Units	RL
Chloride		253	mg/Kg	4.00

Sample: 241889 - SB-7 20'

Param	Flag	Result	Units	RL
Chloride		287	mg/Kg	4.00

Sample: 241890 - SB-7 25'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 241891 - SB-7 30'

Param	Flag	Result	Units	RL
Chloride		292	mg/Kg	4.00

Sample: 241892 - SB-8 1'

Param	Flag	Result	Units	RL
Chloride		863	mg/Kg	4.00

Sample: 241893 - SB-8 3'

Param	Flag	Result	Units	RL
Chloride		1430	mg/Kg	4.00

Sample: 241894 - SB-8 5'

Param	Flag	Result	Units	RL
Chloride		1900	mg/Kg	4.00

Sample: 241895 - SB-8 7'

Param	Flag	Result	Units	RL
Chloride		1260	mg/Kg	4.00

Sample: 241896 - SB-8 10'

Param	Flag	Result	Units	RL
Chloride		456	mg/Kg	4.00

Sample: 241897 - SB-8 15'

Param	Flag	Result	Units	RL
Chloride		739	mg/Kg	4.00

Sample: 241898 - SB-8 20'

Param	Flag	Result	Units	RL
Chloride		481	mg/Kg	4.00

Sample: 241899 - SB-8 25'

Param	Flag	Result	Units	RL
Chloride		496	mg/Kg	4.00

Sample: 241900 - SB-8 30'

Param	Flag	Result	Units	RL
Chloride		337	mg/Kg	4.00

Sample: 241901 - SB-8 40'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
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6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX LELAP-02003 Kansas E-10317 **El Paso:** T104704221-08-TX LELAP-02002 **Midland:** T104704392-08-TX

Analytical and Quality Control Report

Ike Tavarez
Tetra Tech
1910 N. Big Spring Street
Midland, TX, 79705

Report Date: March 22, 2011

Work Order: 11030728

Project Location: Eddy County, NM
Project Name: COG/North West Central Tank Battery
Project Number: 114-6400547

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
259804	SB-1 0-1'	soil	2011-02-25	00:00	2011-03-04
259805	SB-1 3'	soil	2011-02-25	00:00	2011-03-04
259806	SB-1 5'	soil	2011-02-25	00:00	2011-03-04
259807	SB-1 7'	soil	2011-02-25	00:00	2011-03-04
259808	SB-1 10'	soil	2011-02-25	00:00	2011-03-04
259809	SB-1 15'	soil	2011-02-25	00:00	2011-03-04
259810	SB-1 20'	soil	2011-02-25	00:00	2011-03-04
259811	SB-2 0-1'	soil	2011-02-25	00:00	2011-03-04
259812	SB-2 3'	soil	2011-02-25	00:00	2011-03-04
259813	SB-2 5'	soil	2011-02-25	00:00	2011-03-04

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
259814	SB-2 7'	soil	2011-02-25	00:00	2011-03-04
259815	SB-2 10'	soil	2011-02-25	00:00	2011-03-04
259816	SB-2 15'	soil	2011-02-25	00:00	2011-03-04
259817	SB-2 20'	soil	2011-02-25	00:00	2011-03-04
259818	SB-3 0-1'	soil	2011-02-25	00:00	2011-03-04
259819	SB-3 3'	soil	2011-02-25	00:00	2011-03-04
259820	SB-3 5'	soil	2011-02-25	00:00	2011-03-04
259821	SB-3 7'	soil	2011-02-25	00:00	2011-03-04
259822	SB-3 10'	soil	2011-02-25	00:00	2011-03-04
259823	SB-3 15'	soil	2011-02-25	00:00	2011-03-04
259824	SB-3 20'	soil	2011-02-25	00:00	2011-03-04
259825	SB-4 0-1'	soil	2011-03-01	00:00	2011-03-04
259826	SB-4 3'	soil	2011-03-01	00:00	2011-03-04
259827	SB-4 5'	soil	2011-03-01	00:00	2011-03-04
259828	SB-4 7'	soil	2011-03-01	00:00	2011-03-04
259829	SB-4 10'	soil	2011-03-01	00:00	2011-03-04
259830	SB-4 15'	soil	2011-03-01	00:00	2011-03-04
259831	SB-4 20'	soil	2011-03-01	00:00	2011-03-04
259832	SB-5 0-1'	soil	2011-03-01	00:00	2011-03-04
259833	SB-5 3'	soil	2011-03-01	00:00	2011-03-04
259834	SB-5 5'	soil	2011-03-01	00:00	2011-03-04
259835	SB-5 7'	soil	2011-03-01	00:00	2011-03-04
259836	SB-5 10'	soil	2011-03-01	00:00	2011-03-04
259837	SB-5 15'	soil	2011-03-01	00:00	2011-03-04
259838	SB-5 20'	soil	2011-03-01	00:00	2011-03-04
259839	SB-6 0-1'	soil	2011-03-01	00:00	2011-03-04
259840	SB-6 3'	soil	2011-03-01	00:00	2011-03-04
259841	SB-6 5'	soil	2011-03-01	00:00	2011-03-04
259842	SB-6 7'	soil	2011-03-01	00:00	2011-03-04
259843	SB-6 10'	soil	2011-03-01	00:00	2011-03-04
259844	SB-6 15'	soil	2011-03-01	00:00	2011-03-04
259845	SB-6 20'	soil	2011-03-01	00:00	2011-03-04
259846	SB-6 25'	soil	2011-03-01	00:00	2011-03-04
259847	SB-6 30'	soil	2011-03-01	00:00	2011-03-04
259848	SB-7 0-1'	soil	2011-03-01	00:00	2011-03-04
259849	SB-7 3'	soil	2011-03-01	00:00	2011-03-04
259850	SB-7 5'	soil	2011-03-01	00:00	2011-03-04
259851	SB-7 7'	soil	2011-03-01	00:00	2011-03-04
259852	SB-7 10'	soil	2011-03-01	00:00	2011-03-04
259853	SB-7 15'	soil	2011-03-01	00:00	2011-03-04
259854	SB-7 20'	soil	2011-03-01	00:00	2011-03-04
259855	SB-7 25'	soil	2011-03-01	00:00	2011-03-04
259856	SB-7 30'	soil	2011-03-01	00:00	2011-03-04

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 58 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Standard Flags

B - The sample contains less than ten times the concentration found in the method blank.

Summary Report

Ike Tavarez
Tetra Tech
1910 N. Big Spring Street
Midland, TX 79705

Report Date: March 22, 2011

Work Order: 11030728

Project Location: Eddy County, NM
Project Name: COG/North West Central Tank Battery
Project Number: 114-6400547

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
259804	SB-1 0-1'	soil	2011-02-25	00:00	2011-03-04
259805	SB-1 3'	soil	2011-02-25	00:00	2011-03-04
259806	SB-1 5'	soil	2011-02-25	00:00	2011-03-04
259807	SB-1 7'	soil	2011-02-25	00:00	2011-03-04
259808	SB-1 10'	soil	2011-02-25	00:00	2011-03-04
259809	SB-1 15'	soil	2011-02-25	00:00	2011-03-04
259810	SB-1 20'	soil	2011-02-25	00:00	2011-03-04
259811	SB-2 0-1'	soil	2011-02-25	00:00	2011-03-04
259812	SB-2 3'	soil	2011-02-25	00:00	2011-03-04
259813	SB-2 5'	soil	2011-02-25	00:00	2011-03-04
259814	SB-2 7'	soil	2011-02-25	00:00	2011-03-04
259815	SB-2 10'	soil	2011-02-25	00:00	2011-03-04
259816	SB-2 15'	soil	2011-02-25	00:00	2011-03-04
259817	SB-2 20'	soil	2011-02-25	00:00	2011-03-04
259818	SB-3 0-1'	soil	2011-02-25	00:00	2011-03-04
259819	SB-3 3'	soil	2011-02-25	00:00	2011-03-04
259820	SB-3 5'	soil	2011-02-25	00:00	2011-03-04
259821	SB-3 7'	soil	2011-02-25	00:00	2011-03-04
259822	SB-3 10'	soil	2011-02-25	00:00	2011-03-04
259823	SB-3 15'	soil	2011-02-25	00:00	2011-03-04
259824	SB-3 20'	soil	2011-02-25	00:00	2011-03-04
259825	SB-4 0-1'	soil	2011-03-01	00:00	2011-03-04
259826	SB-4 3'	soil	2011-03-01	00:00	2011-03-04
259827	SB-4 5'	soil	2011-03-01	00:00	2011-03-04
259828	SB-4 7'	soil	2011-03-01	00:00	2011-03-04
259829	SB-4 10'	soil	2011-03-01	00:00	2011-03-04
259830	SB-4 15'	soil	2011-03-01	00:00	2011-03-04
259831	SB-4 20'	soil	2011-03-01	00:00	2011-03-04
259832	SB-5 0-1'	soil	2011-03-01	00:00	2011-03-04
259833	SB-5 3'	soil	2011-03-01	00:00	2011-03-04

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
259834	SB-5 5'	soil	2011-03-01	00:00	2011-03-04
259835	SB-5 7'	soil	2011-03-01	00:00	2011-03-04
259836	SB-5 10'	soil	2011-03-01	00:00	2011-03-04
259837	SB-5 15'	soil	2011-03-01	00:00	2011-03-04
259838	SB-5 20'	soil	2011-03-01	00:00	2011-03-04
259839	SB-6 0-1'	soil	2011-03-01	00:00	2011-03-04
259840	SB-6 3'	soil	2011-03-01	00:00	2011-03-04
259841	SB-6 5'	soil	2011-03-01	00:00	2011-03-04
259842	SB-6 7'	soil	2011-03-01	00:00	2011-03-04
259843	SB-6 10'	soil	2011-03-01	00:00	2011-03-04
259844	SB-6 15'	soil	2011-03-01	00:00	2011-03-04
259845	SB-6 20'	soil	2011-03-01	00:00	2011-03-04
259846	SB-6 25'	soil	2011-03-01	00:00	2011-03-04
259847	SB-6 30'	soil	2011-03-01	00:00	2011-03-04
259848	SB-7 0-1'	soil	2011-03-01	00:00	2011-03-04
259849	SB-7 3'	soil	2011-03-01	00:00	2011-03-04
259850	SB-7 5'	soil	2011-03-01	00:00	2011-03-04
259851	SB-7 7'	soil	2011-03-01	00:00	2011-03-04
259852	SB-7 10'	soil	2011-03-01	00:00	2011-03-04
259853	SB-7 15'	soil	2011-03-01	00:00	2011-03-04
259854	SB-7 20'	soil	2011-03-01	00:00	2011-03-04
259855	SB-7 25'	soil	2011-03-01	00:00	2011-03-04
259856	SB-7 30'	soil	2011-03-01	00:00	2011-03-04

	BTEX				TPH DRO - NEW	TPH GRO
Sample - Field Code	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
259804 - SB-1 0-1'	<0.0200	<0.0200	0.140	0.391	<50.0	6.69
259811 - SB-2 0-1'					<50.0	<2.00
259818 - SB-3 0-1'					<50.0	<2.00
259825 - SB-4 0-1'					<50.0	<2.00
259832 - SB-5 0-1'	2.86	82.8	64.8	86.0	3530	1730
259833 - SB-5 3'	3.60	75.1	69.9	89.6	2960	2850
259834 - SB-5 5'	<0.100	0.602	3.71	6.61	252	287
259839 - SB-6 0-1'	<0.200	3.16	17.8	34.7	3870	1530
259840 - SB-6 3'	<0.0200	0.159	<0.0200	<0.0200	<50.0	<2.00
259848 - SB-7 0-1'	5.25	86.5	87.6	120	10800	3640
259849 - SB-7 3'	1.37	46.9	39.5	63.7	1560	1240
259850 - SB-7 5'	<0.0200	<0.0200	0.150	<0.0200	<50.0	<2.00

Sample: 259804 - SB-1 0-1'

Param	Flag	Result	Units	RL
Chloride		15400	mg/Kg	4.00

Sample: 259805 - SB-1 3'

Param	Flag	Result	Units	RL
Chloride		5170	mg/Kg	4.00

Sample: 259806 - SB-1 5'

Param	Flag	Result	Units	RL
Chloride		4380	mg/Kg	4.00

Sample: 259807 - SB-1 7'

Param	Flag	Result	Units	RL
Chloride		569	mg/Kg	4.00

Sample: 259808 - SB-1 10'

Param	Flag	Result	Units	RL
Chloride		489	mg/Kg	4.00

Sample: 259809 - SB-1 15'

Param	Flag	Result	Units	RL
Chloride		359	mg/Kg	4.00

Sample: 259810 - SB-1 20'

Param	Flag	Result	Units	RL
Chloride		250	mg/Kg	4.00

Sample: 259811 - SB-2 0-1'

Param	Flag	Result	Units	RL
Chloride		6040	mg/Kg	4.00

Sample: 259812 - SB-2 3'

Param	Flag	Result	Units	RL
Chloride		3360	mg/Kg	4.00

Sample: 259813 - SB-2 5'

Param	Flag	Result	Units	RL
Chloride		405	mg/Kg	4.00

Sample: 259814 - SB-2 7'

Param	Flag	Result	Units	RL
Chloride		207	mg/Kg	4.00

Sample: 259815 - SB-2 10'

Param	Flag	Result	Units	RL
Chloride		281	mg/Kg	4.00

Sample: 259816 - SB-2 15'

Param	Flag	Result	Units	RL
Chloride		252	mg/Kg	4.00

Sample: 259817 - SB-2 20'

Param	Flag	Result	Units	RL
Chloride		232	mg/Kg	4.00

Sample: 259818 - SB-3 0-1'

Param	Flag	Result	Units	RL
Chloride		498	mg/Kg	4.00

Sample: 259819 - SB-3 3'

Param	Flag	Result	Units	RL
Chloride		2310	mg/Kg	4.00

Sample: 259820 - SB-3 5'

Param	Flag	Result	Units	RL
Chloride		957	mg/Kg	4.00

Sample: 259821 - SB-3 7'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 259822 - SB-3 10'

Param	Flag	Result	Units	RL
Chloride		249	mg/Kg	4.00

Sample: 259823 - SB-3 15'

Param	Flag	Result	Units	RL
Chloride		234	mg/Kg	4.00

Sample: 259824 - SB-3 20'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 259825 - SB-4 0-1'

Param	Flag	Result	Units	RL
Chloride		1210	mg/Kg	4.00

Sample: 259826 - SB-4 3'

Param	Flag	Result	Units	RL
Chloride		1290	mg/Kg	4.00

Sample: 259827 - SB-4 5'

Param	Flag	Result	Units	RL
Chloride		857	mg/Kg	4.00

Sample: 259828 - SB-4 7'

Param	Flag	Result	Units	RL
Chloride		717	mg/Kg	4.00

Sample: 259829 - SB-4 10'

Param	Flag	Result	Units	RL
Chloride		339	mg/Kg	4.00

Sample: 259830 - SB-4 15'

Param	Flag	Result	Units	RL
Chloride		204	mg/Kg	4.00

Sample: 259831 - SB-4 20'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 259832 - SB-5 0-1'

Param	Flag	Result	Units	RL
Chloride		5300	mg/Kg	4.00

Sample: 259833 - SB-5 3'

Param	Flag	Result	Units	RL
Chloride		5180	mg/Kg	4.00

Sample: 259834 - SB-5 5'

Param	Flag	Result	Units	RL
Chloride		3680	mg/Kg	4.00

Sample: 259835 - SB-5 7'

Param	Flag	Result	Units	RL
Chloride		1300	mg/Kg	4.00

Sample: 259836 - SB-5 10'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 259837 - SB-5 15'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 259838 - SB-5 20'

Param	Flag	Result	Units	RL
Chloride		235	mg/Kg	4.00

Sample: 259839 - SB-6 0-1'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 259840 - SB-6 3'

Param	Flag	Result	Units	RL
Chloride		2010	mg/Kg	4.00

Sample: 259841 - SB-6 5'

Param	Flag	Result	Units	RL
Chloride		1000	mg/Kg	4.00

Sample: 259842 - SB-6 7'

Param	Flag	Result	Units	RL
Chloride		418	mg/Kg	4.00

Sample: 259843 - SB-6 10'

Param	Flag	Result	Units	RL
Chloride		354	mg/Kg	4.00

Sample: 259844 - SB-6 15'

Param	Flag	Result	Units	RL
Chloride		251	mg/Kg	4.00

Sample: 259845 - SB-6 20'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 259846 - SB-6 25'

Param	Flag	Result	Units	RL
Chloride		221	mg/Kg	4.00

Sample: 259847 - SB-6 30'

Param	Flag	Result	Units	RL
Chloride		320	mg/Kg	4.00

Sample: 259848 - SB-7 0-1'

Param	Flag	Result	Units	RL
Chloride		1080	mg/Kg	4.00

Sample: 259849 - SB-7 3'

Param	Flag	Result	Units	RL
Chloride		4180	mg/Kg	4.00

Sample: 259850 - SB-7 5'

Param	Flag	Result	Units	RL
Chloride		2500	mg/Kg	4.00

Sample: 259851 - SB-7 7'

Param	Flag	Result	Units	RL
Chloride		419	mg/Kg	4.00

Sample: 259852 - SB-7 10'

Param	Flag	Result	Units	RL
Chloride		792	mg/Kg	4.00

Sample: 259853 - SB-7 15'

Param	Flag	Result	Units	RL
Chloride		324	mg/Kg	4.00

Sample: 259854 - SB-7 20'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 259855 - SB-7 25'

Param	Flag	Result	Units	RL
Chloride		279	mg/Kg	4.00

Sample: 259856 - SB-7 30'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800-378-1296 806-794-1296 FAX 806-794-1298
200 East Sunset Road, Suite E El Paso, Texas 79922 915-585-3443 FAX 915-585-4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432-689-6301 FAX 432-689-6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972-242-7750
E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Ike Tavarez
Tetra Tech
1910 N. Big Spring Street
Midland, TX, 79705

Report Date: September 24, 2012

Work Order: 12091435

Project Location: Eddy Co., NM
Project Name: COG/NW Central Tank Battery (CTB)
Project Number: 114-6401452

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
309405	Bore Hole 1 0-1'	soil	2012-09-11	00:00	2012-09-14
309406	Bore Hole 1 2-3'	soil	2012-09-11	00:00	2012-09-14
309407	Bore Hole 1 4-5'	soil	2012-09-11	00:00	2012-09-14
309408	Bore Hole 1 6-7'	soil	2012-09-11	00:00	2012-09-14
309409	Bore Hole 1 9-10'	soil	2012-09-11	00:00	2012-09-14
309410	Bore Hole 1 14-15'	soil	2012-09-11	00:00	2012-09-14
309411	Bore Hole 1 19-20'	soil	2012-09-11	00:00	2012-09-14
309412	Bore Hole 2 0-1'	soil	2012-09-11	00:00	2012-09-14
309413	Bore Hole 2 2-3'	soil	2012-09-11	00:00	2012-09-14
309414	Bore Hole 2 4-5'	soil	2012-09-11	00:00	2012-09-14
309415	Bore Hole 2 6-7'	soil	2012-09-11	00:00	2012-09-14
309416	Bore Hole 2 9-10'	soil	2012-09-11	00:00	2012-09-14

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Summary Report

Ike Tavarez
Tetra Tech
1910 N. Big Spring Street
Midland, TX 79705

Report Date: September 24, 2012

Work Order: 12091435

Project Location: Eddy Co., NM
Project Name: COG/NW Central Tank Battery (CTB)
Project Number: 114-6401452

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
309405	Bore Hole 1 0-1'	soil	2012-09-11	00:00	2012-09-14
309406	Bore Hole 1 2-3'	soil	2012-09-11	00:00	2012-09-14
309407	Bore Hole 1 4-5'	soil	2012-09-11	00:00	2012-09-14
309408	Bore Hole 1 6-7'	soil	2012-09-11	00:00	2012-09-14
309409	Bore Hole 1 9-10'	soil	2012-09-11	00:00	2012-09-14
309410	Bore Hole 1 14-15'	soil	2012-09-11	00:00	2012-09-14
309411	Bore Hole 1 19-20'	soil	2012-09-11	00:00	2012-09-14
309412	Bore Hole 2 0-1'	soil	2012-09-11	00:00	2012-09-14
309413	Bore Hole 2 2-3'	soil	2012-09-11	00:00	2012-09-14
309414	Bore Hole 2 4-5'	soil	2012-09-11	00:00	2012-09-14
309415	Bore Hole 2 6-7'	soil	2012-09-11	00:00	2012-09-14
309416	Bore Hole 2 9-10'	soil	2012-09-11	00:00	2012-09-14

Sample: 309405 - Bore Hole 1 0-1'

Param	Flag	Result	Units	RL
Chloride		**8770**	mg/Kg	4

Sample: 309406 - Bore Hole 1 2-3'

Param	Flag	Result	Units	RL
Chloride		**7450**	mg/Kg	4

Sample: 309407 - Bore Hole 1 4-5'

Param	Flag	Result	Units	RL
Chloride		2790	mg/Kg	4

Sample: 309408 - Bore Hole 1 6-7'

Param	Flag	Result	Units	RL
Chloride		413	mg/Kg	4

Sample: 309409 - Bore Hole 1 9-10'

Param	Flag	Result	Units	RL
Chloride		399	mg/Kg	4

Sample: 309410 - Bore Hole 1 14-15'

Param	Flag	Result	Units	RL
Chloride		82.7	mg/Kg	4

Sample: 309411 - Bore Hole 1 19-20'

Param	Flag	Result	Units	RL
Chloride		157	mg/Kg	4

Sample: 309412 - Bore Hole 2 0-1'

Param	Flag	Result	Units	RL
Chloride		955	mg/Kg	4

Sample: 309413 - Bore Hole 2 2-3'

Param	Flag	Result	Units	RL
Chloride		3800	mg/Kg	4

Sample: 309414 - Bore Hole 2 4-5'

Param	Flag	Result	Units	RL
Chloride		2260	mg/Kg	4

Sample: 309415 - Bore Hole 2 6-7'

Param	Flag	Result	Units	RL
Chloride		**118**	mg/Kg	4

Sample: 309416 - Bore Hole 2 9-10'

Param	Flag	Result	Units	RL
Chloride		**44.3**	mg/Kg	4